DOCUMENT RESUME

ED 073 008 SO 005 309

AUTHOR	Lewis, Hilda P., Ed.
TITLE	Art for the Preprimary Child.
INSTITUTION	National Art Education Association, Washington, D.C.
PUB DATE	72
NOTE	129p.
AVAILABLE FROM	National Art Education Association, 1201 Sixteenth Street, N.W., Washington, D.C. 20036 ($4.75; Quantity Discounts on Orders of 10 or more)
EDRS PRICE	MF-$0.65 HC Not Available from EDRS.
DESCRIPTORS	Anthologies; *Art; Art Activities; *Art Education; Art Materials; Child Development; Cognitive Development; Creativity; Parent Role; *Preschool Children; *Preschool Education; Preschool Learning; Teacher Role; Visual Arts

ABSTRACT

This book is addressed primarily to those who facilitate early learning in art education. It consists of essays by writers whose background enables them to speak insightfully on their topic. Several essays are written by teachers of preprimary children. Others were written by research workers who have studied the art of young children. Articles include: 1) a brief survey of research on the child's development as a background for viewing his artistic growth; 2) a review of studies that trace artistic evolution in the preprimary years; 3) an exploration of the origins of creative power in children; 4) a discussion of the roles of parent and teacher; 5) ideas on how art contributes to general learning; 6) information on acquiring, storing, and presenting creative materials for young children; and 7) contrasting models of early education programs. (FDI)

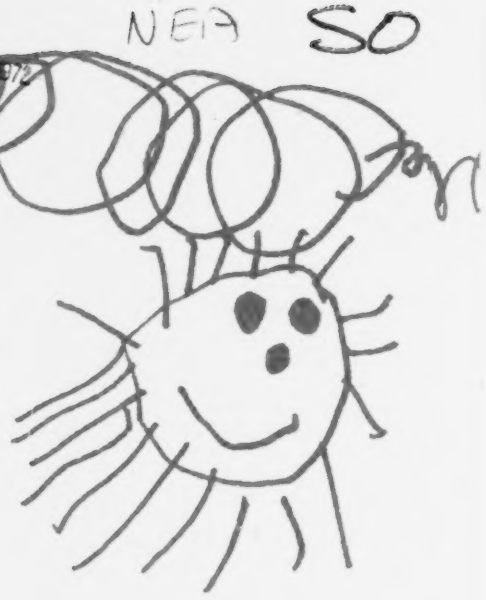
ED 073008

SCOPE OF INTEREST NOTICE

The ERIC Facility has assigned this document for processing to: SO PS

In our judgement, this document is also of interest to the clearinghouses noted to the right. Indexing should reflect their special points of view.

NEA SO



ART FOR THE PREPRIMARY CHILD

PERMISSION TO REPRODUCE THIS COPYRIGHTED MATERIAL BY MICROFICHE ONLY HAS BEEN GRANTED BY

NEA

TO ERIC AND ORGANIZATIONS OPERATING UNDER AGREEMENTS WITH THE U.S. OFFICE OF EDUCATION. FURTHER REPRODUCTION OUTSIDE THE ERIC SYSTEM REQUIRES PERMISSION OF THE COPYRIGHT OWNER

SO005309

ED 073003

ART FOR THE PREPRIMARY CHILD

Edited by HILDA PRESENT LEWIS

The National Art Education Association
1201 Sixteenth Street, N.W.
Washington, D. C. 20036

SPRING, 1972

TABLE OF CONTENTS

Introduction ..... Hilda P. Lewis .. 4
The Young Child in His World ..... Lucile Perryman .. 6
Research on the Art of Young Children ..... Lambert Brittain .. 18
The Origin of Creative Power in Children .. Christopher Alexander .. 32
The Role of the Parent ..... Polly McVickar .. 50
The Role of the Teacher ..... Lois Lord .. 58
Art in Children's Learning ..... Ethel Young .. 74
Presenting Materials Effectively ..... Thelma Harms .. 92
Early Education in the Visual Arts ..... Stanley S. Madeja .. 110

INTRODUCTION

HILDA P. LEWIS

Traditionally in the United States, public responsibility for education has begun at the first grade. Kindergartens are provided by many, but not all, public school systems. Responsibility for the education of children below public school entrance age has been left with parents. Middle class parents, eager to expand opportunities for their children, formed parent cooperative nursery schools, sent their children to private nursery schools, or took advantage of programs for children, available under religious, philanthropic, college, or university auspices. Day care centers looked after some of the children of the poor, freeing mothers for employment outside the home.

The turbulence of the sixties focused attention on social inequalities. The public schools, which had been conceived as a force for democratizing American life, were now viewed as perpetuating inequality. Differences in achievement and learning ability of privileged and underprivileged children were evident at the point of school entrance, and became more marked with each passing year. Head Start was established as a Federally funded program to help young children get ready for school learning. Research that called attention to the importance of early learning encouraged parents to seek nursery school education for their children. At the same time more mothers began to accept the idea that their best interests and those of their children would be served by employment outside the home. Day care centers were established to meet the needs of middle class families. In the last few years interest in early childhood education has grown dramatically. Preprimary education is coming to be regarded as desirable for all children.

The increased concern with education for the preprimary child has led to the renewal of scientific interest in early developments, debate

over instructional priorities and means, and examination of existing programs.

Art activity has long held a secure place in the preprimary programs and in the play of young children. Scribbling, drawing, block-building, clay modeling, and the like come naturally to the child. He need not be urged to try them or shown how they are done. He seems to discover them for himself and to derive pleasure from carrying them out. The task of parents and teachers is to find ways of maximizing the child's opportunity to enjoy art experiences and to provide art activities that contribute to motor, affective, perceptual, cognitive, and aesthetic development.

This book is addressed primarily to those who facilitate early learning—parents and teachers. It consists of essays by writers whose background enables them to speak insightfully on their topic. Several essays are written by teachers of preprimary children. Others were written by research workers who have studied the art of young children. The book offers a theoretical framework for understanding child art, time-tested suggestions for working with young children at home and in school, and new approaches to art curricula for the young. No attempt has been made to advance a particular point of view by selecting authors with a common perspective. The reader will note points of concurrence as well as differences among contributors.

The editor is indebted to the National Art Education Association for initiating the publication and to the authors who graciously contributed their time, energies, and wisdom.

Hilda Present Lewis
Editor

Hilda Present Lewis is associate professor, San Francisco State College, San Francisco, California

THE YOUNG CHILD IN HIS WORLD

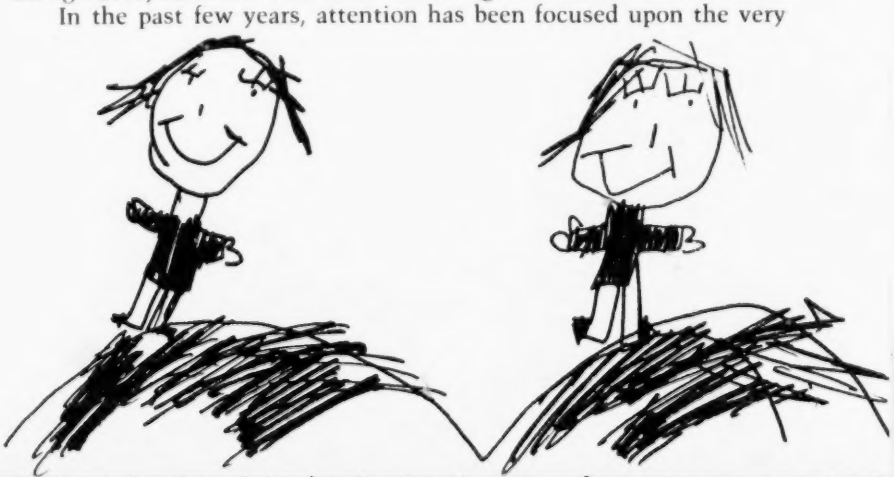
LUCILE PERRYMAN

Lucile Perryman provides a brief survey of research on the child's general development as a background against which to view his artistic growth. Dividing the preprimary years into three periods she describes the ways in which the infant, toddler, and young child relate to their world. The infant learns about his world through taste and touch. The two- or three-year-old toddler learns about his world by action. The young child, between four and seven, becomes increasingly adept at learning through language.

Although she is concerned primarily with general developmental laws, Dr. Perryman is careful to point out that there are inborn differences among children, and that these differences are modified or accentuated by early experience. Of particular interest to art educators are references to the development of visual perception. Dr. Perryman takes notes of two opposing interpretations of child development, as a fixed set of stages, tied to chronological age or as a process greatly affected by experience. Different interpretations of the nature of the developmental process give rise to different programs. Dr. Perryman cautions against excessive pressures to achieve which can make a child unsure of his own ability, "a cautious imitator unable to venture or try to create new solutions for himself." She recommends an environment that is challenging but supportive.

The way the child views the world can only be inferred from observations, studies, and theories about how young children grow and develop. An adult can never hope to enter the child's world, even though every adult carries within him vestiges of the child he once was.

In the past few years, attention has been focused upon the very

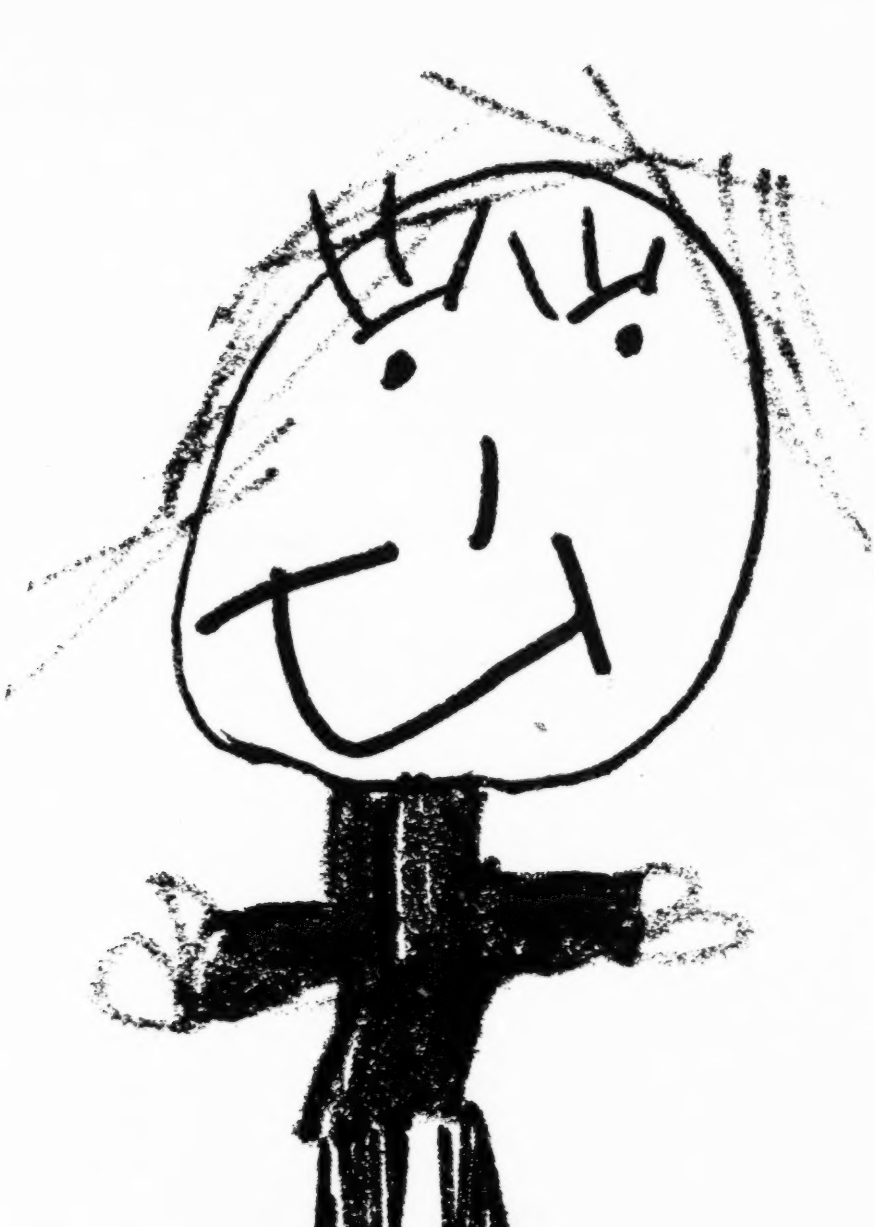


young in our society. Many scholars from disciplines as widely varied as linguistics, sociology, anthropology, mathematics, and psychology have sought to penetrate the child's mind in order to understand more fully how the young child organizes his perceptions of the external world. Countless questions have been asked about the process or modes of thought which the young child uses to bring his internal world into harmony with the realities of the external world. Many investigators have sought to understand how the young child's earliest experiences influence his later development. Some investigators have postulated fixed sequences of development closely bound to chronological age; others see the child's development more closely corresponding to the quality and quantity of his environmental experiences. Some educators have attempted to structure the young child's world in order that his normal developmental processes might be enhanced and possibly accelerated. Other educators have cautioned that many processes of development, in particular the growth of conceptual thinking, is a slow process forged by building layer upon layer of concrete first-hand experiences. Regardless of the divergent opinions, all who seek to understand the young child agree that the years from birth to seven years of age are critical and lay the foundation for all that is to follow.

The Infant's World

Babies are born with different innate constitutions. Some babies are what Milly Almy[1] has called the "yes-yes babies." These babies arrive into the world with a hearty squall and a determination to have their needs known. Then there are the "may-be babies." These babies take their first breath tentatively and utter their first cry only after they have received the well known spank on the bottom. There are also the "no-no babies." These babies reluctantly enter the outside world and must be coaxed and helped into taking hold of life. No matter what his constitution, every baby from the moment of his birth begins to be influenced by his environment. He begins to learn either that the world is friendly and safe or that it is hostile and dangerous.

The infant appears to gain understanding of his world mainly



through his senses of touch and taste. In the beginning he does not seem to know where his own body ends and the outside world begins. He learns to feel secure when the touch of the arms that carry him give his body firm yet gentle support. He learns to feel loved when his food arrives promptly to put an end to his hunger pangs. He learns to define the limits of his own body as the clothing which surrounds him gives his body just the right amount of stimulation. He learns about his hands and his feet as well as other objects in his world as he grasps them and sucks on them. The infant's mouth appears to be his chief means for discovering what the world is like.

However, this does not mean that the infant is lacking in visual perception. For many years psychologists have concerned themselves with what the baby sees. Robert L. Fantz[2] suggested that form perception is learned very early in life and that there may well be an unlearned primitive meaning in the form perception of very young infants. Fantz found that in infants of four days to six months of age, there was a preference for looking at the pattern of a real face in contrast to any controlled pattern. He also found that complex patterns were preferred to simple patterns and that any pattern was preferred to a plain color. Fantz suggests that pattern is the most reliable of visual clues for the infant, both in object recognition and for clues in spacial orientation. Fantz explains how color changes with illumination, retinal size changes with distance, and outlines change with point of view, but relationships of details and surface texture patterns remain relatively constant under diverse conditions.

From a bundle of reflexes the newborn begins to gain control over his body. During his first year the infant learns to raise his chin and focus his eyes upon objects that enter his field of vision. He gradually gains control of his head, as his neck, shoulder, and back muscles grow and strengthen. He then gains control of his arms, and he begins to reach out for things he sees. Next he learns to sit, as control over his trunk increases. Soon he is able to grasp objects that come within his reach and transfer them from his hands to his mouth. His whole body becomes involved in his early efforts to manipulate objects. The infant's early grasping efforts have been described as that of "a crudely functioning hand at the end of a poorly directed arm." [3]He must keep his eyes focussed upon the object he is attempting to grasp, and his whole trunk moves with his arm and hand. Finally the infant gains control over his legs and feet and is able to stand upright, and ultimately to walk on his own. This early motor development takes place in a head-to-toe direction, and although infants will vary as to the given time that each particular development takes place, there is an orderly sequence of events. Infants do not stand before they sit, or grasp before they learn to focus their eyes. Mead and Macgregor[4] have suggested that some of the motor sequence, such as creeping, may be culturally determined. Studies of Balinese infants, showed that they progressed from sitting to squatting to standing. Mead and Macgregor

also found variation in the patterns of grasping. However, these are only minor variations in the broad framework of head-to-toe motor development.

As the baby grows, his eyes, nose, and ears begin to give him additional ways of knowing about his world. From his vague unfocussed beginning, the baby continually learns to sort and differentiate. He begins to respond not only to the touch and taste of his mother but to the sound of her voice and then later to the expressions of her face and the gestures which she uses. The noise of his bottle being prepared will quiet him as he waits in eager anticipation for his food to appear. Although the infant has no measurable understanding of language, loud angry voices may cause him to cry, and soft murmured words may sooth him and cause him to coo and smile. The more people talk to a baby, the more the baby tends to vocalize in response. A normal infant is born with an ability to make every sound used in any known spoken language. As he hears the sounds of the language around him, the infant soon selects only those sound patterns which are used in the language he is learning.

The infant progressively expands his knowledge of the world as he gains greater motor ability, and he is able to bring what he sees and hears into his hands and ultimately into his mouth. How much and in what manner the infant reaches out and explores his world will be a combination of both his constitutional characteristics and his learned feelings about his environment as he has interacted with it. If he has learned what Eric Erickson [5] has called "basic trust," which is a feeling that the world is a good and safe place, the growing baby will become an avid explorer and discoverer.

The Toddler's World

Learning to move with ease in an upright posture and learning refined eye-hand movements, appear to follow an orderly developmental pattern where maturation and motivation play important roles. The physical mastery of his body is the all consuming task of the two- and three-year-old.

Physical growth during this period is characterized by accelerated skeletal development. Pliable cartelage is gradually replaced by bone, which gives added strength to the body. According to Stuart,[6] bone growth continues to exceed muscle growth until the age of three years, and the rate of growth in skin and subcutaneous tissues declines rapidly.

The early gait of the toddler resembles that of a sailor aboard a ship in heavy seas. His feet are held wide apart, toes are turned out, and his body has a slight forward list. He rolls from side to side as he propells himself forward. There is little economy in his motion. Balance is precarious, and he may be easily toppled from his feet. Arms and legs tend to act in unison rather than in balanced opposition. He still may extend both hands when he reaches for an object, and although he can use thumb and fingers to pick up small things, for

the most part his fingers act in unison and manipulation remains less than precise.

The toddler's main problem in motor coordination is that of letting go with control. The strong action of the flexor muscles used in grasping, easily observed in the infant as the grasp reflex, is accompanied by the inhibition of the extensor muscles. Before extensor and flexor coordination can be developed, the toddlers nervous system must mature. By three years the toddler can sit down without a thud, stack a tower of blocks, and move with a free flowing gait. He has also developed sphincter control and is able to feed himself with little assistance from adults. The toddler seems to find great pleasure in repetitive practice of basic motor skills such as walking, running, climbing, jumping, hopping, and manipulating objects.

As power over his body grows, the toddler's life space expands. His natural curiosity and pleasure in movement propel him from place to place and often into situations in which he is not safe because of his lack of experience. He therefore needs almost constant supervision or a restricted environment free from potentially harmful things.

The toddler is primarily a motor learner. By moving objects from place to place he learns about size, shape, and weight. He pulls, pushes, stacks, and inserts things, discovering that large and heavy objects resist his attempts to move them and small light objects readily slip from his fingers, allude his grasp, and disappear in large containers. He discovers that squarish objects do not fit into roundish holes and that oblong shapes do not fit into triangular spaces. As Piaget[7] has stated, the toddler knows his world largely through what he can do with it.

Changes in visual perception are also taking place. Rice's[8] work with children from two years to six years of age found that children of two and three years of age were little concerned with the orientation of forms in space. When presented with a diamond shape in a horizontal position and asked to match it to similar shapes in both horizontal and vertical position, the two- and three-year-old insisted they were all the same. It was not until age five or six that children noted and were concerned over orientation of a form in space. These may account for the great confusion young children have with the differentiation of letters like d, b, p, q, and numbers like 6 and 9.

Brian and Goodenough[9] in their experiments found a shift in matching preferences from form to color at age 2½, peaking at age 4½, and then returning to form as the preferred mode for matching colored geometric shapes. Huang[10] in his work with toddlers also discovered that the intensity of the color increased the preference of using color over form in matching tasks. He also found that the more meaningful the form was to the child, the more he tended to ignore the color and to match by form. Cook[11] also found that children could discriminate color better than they could name colors. Two-year-olds working with discs of Munsell color hues in three different intensities found that blue was matched more accurately than tint or shade and that match-

ing exceeded naming by 20%. As naming increased, so did accuracy of matching. Synolds[12] demonstrated that background color also will influence perception of form. He found that complementary colors facilitated discrimination and, further, that warm-colored forms were easier to see on cool-colored backgrounds than cool-colored forms on warm-colored backgrounds. Johnson's[13] work with children using polarized spectacles established that by age two, children had stereoscopic vision and used ocular convergence as a cue in judging size and distance. Thrum[14] and Hicks[15] found that in discriminating gross size, two- and three-year-olds found big forms the easiest to match, with little forms coming next and middle size forms being the most difficult. It seems that the toddler's visual perception is based upon his selection of one or two dominant clues from his visual field, the clues being selected on the bases of interest, emotion, and proximity.

In this period the toddler is developing what Erickson[16] has called "autonomy," discovering that he is an independent being, but still very dependent upon adult care and support. His behavior is like that of a yo-yo: he moves out and bounces back to the security of the protective adults in his world. Milly Almy[17] has described this period of development as one of "power testing." This is a time of "me, my and mine." It can be a trying time for both the child and the adults who care for him, unless his new found independence is treated as positive normal development. The once pliable infant is now asserting his selfhood. He is finding out that he can say "no" to the important adults in his life and survive.

Language is developing concurrently with motor development. However, words are used primarily for labeling or naming objects or activities which the toddler can manipulate or act out. The toddler understands much more language than he uses. A mother can say to her two-year-old, "Bring me the big book on the table," and he will trot off and secure the right book for her, although the toddler himself may only be able to say "me bring," or "me, book." Just how much of his understanding at this point is response to words per se and how much to gesture and intonation is still difficult to assess. But his language appears to be used as a pointer rather than as a symbolic schemata for organizing his thoughts about things.

The toddler's world is an egocentric one. He is the measure of all things he encounters. Piaget[18] has suggested that his thinking is restricted because he cannot view the world from any vantage point other than his own. He responds to the immediate appearance of things and to the feelings which the objects or situations evoke in him. He attributes his own emotions to inanimate objects so that his thinking is also highly anthropomorphic. "Poor car, don't cry," soothes a three-year-old as he gently pats his battered toy. "You'll get better soon. Mommie, Mommie, make it well."

Much of his language is directed to no one in particular. The toddler uses language in chants accompanying his activities almost as

if he were trying to get inside the words to understand them better. A two-year-old scooping up shells with his mother on the beach counted with her as they stacked the shells in piles. "One shell, two shells, three shells, four shells, five shells, see the pile grow." The act was repeated over and over until the mother grew weary, but the toddler continued. Scooping up various amounts he counted, "one, two, big bunch. One, two, big bunch. See one? See two? See my big bunch?"

A three-year-old at the finger paint table chanted, "Blue, blue. Making blue. All over bluey, blue. Pooey, gooey, bluey blue. Blue, blue. Making blue. Do you see my bluey blue?"

At this stage of their development children play beside each other rather than with one another. Talk, while constant, is not true conversation. Conflicts over possession of objects that capture their attention are frequent, but the introduction of a new stimulus to one of the contenders can divert him with relative ease. To the adult observer much of a toddler's activity appears random and flighty. But to the individual child it has deep personal meaning. In all his activities the toddler is discovering more about himself and his relation to the outside world.

The Young Child's World

As the toddler matures, action for action's sake, though still important, now becomes infused with fantasy. The four-, five-, six-, and seven-year-old turns to stunts, tricks, and imaginative play in order to further his physical prowess and his understanding of the world. He is still highly egocentric and relies mostly upon a motor-sensory mode of understanding his world. Language is developing rapidly, and he is beginning to use it as another mode of organizing the objects and events in his environment.

The general development of children in this age range may best be described as one of increased differentiation. Individuality is the rule. Averages often conceal the wide variations in normal growth patterns, and age alone is less likely to produce a reliable clue for predicting behavior. Motor behavior continues to become more specific and coordinated. Preferred handedness is established, and there is a growing ability to reproduce letters, numbers, and other forms without undue tension. Feelings and emotions are increasingly refined as the child begins to discriminate "right from wrong" and "good from bad" in accordance with the values of the important adults in his life. Social awareness is expanding rapidly as the child learns to distinguish the roles which various people play and his relationships to them. His organization of sensory input also continues to become more specific and integrated. Categorizing or sorting of objects, people, and events on the basis of identifying characteristics becomes more accurate, and categories become increasingly organized into systems or structures which indicate the relationships which exist between the various classifications. As Bruner has explained, both personal needs and goals

and individual preferences for making inferences from incoming sensory stimuli will influence one's perceptions. He further suggests that "once a society has patterned a man's interests and trained him to expect what is likely in that society, it has gained a great measure of control not only on his thought processes but also on the very material on which thought works—the experienced data of perception." [19] The young child's perceptions continue to be more dominated by his motor sensory clues than by his visual and cognitive clues. In coping with his world the young child tends to "act" through his problems rather than "thinking" them through to a solution.

As the child manipulates objects, he begins to see that they have multiple identifying characteristics and may be sorted and arranged in a variety of ways. One object may have several functions or uses and may be related to other objects in more than one fashion.

Events have an order and are related to each other in a specific fashion. Most important is the child's growing realization that words may be used to stand for objects, characteristics, functions, events, and relationships. Rather than using words merely as pointers to concrete things, he now can think about things independently of their presence. This growth in cognitive power has moved the child closer to the adult's ways of logical thinking and ordering of the world. Piaget[20] has described this growth in terms of "accommodation" and of "assimilation." The child must accommodate or modify his egocentric affect-laden view of the world to a more objective realistic view. He does so by taking in the views of others and "assimilating" or joining them to his own views. Piaget believes that this is best achieved by spontaneous play with his peers. Another child's view is easier to assimilate than an adult's because it is closer to his own. Not only does the peer group provide an important ingredient in cognitive growth, but it also serves as an impetus to move the child out and away from his close dependency on family and home. As the child grows, the views and opinions of his peer group influence his behavior more and more. With the support of his friends the child feels secure enough to challenge the authority of the all powerful adults who surround him. "Why can't I do it?" is the familiar battlecry of the growing child.

The precise role of spontaneous play in a child's cognitive development is still unknown, and there remain many unanswered questions. However, there seems to be growing evidence that spontaneous play can provide opportunities for young children to test their knowledge and to re-think their solutions to problems. There are also opportunities to modify their own points of view by assimilating the views of their peers. Play allows the child to test out "as if" postulations which are the bases of the highest levels of creative thought.

If basic trust and autonomy have been established during infancy and toddlerhood, the young child enters what Erickson[21] has called the stage of "initiative." He moves out into the world with confidence

and curiosity. He is achievement-oriented and takes pride in doing things well. Some educators have cautioned that premature structuring and pressure to achieve standards set too high may cause the young child to become fearful and distrust his own abilities to cope with his world. He may seek to stay with patterns of behaving which he has used in the past and resist any attempts made to have him modify his egocentric views. He becomes a cautious imitator unable to venture or try to create new solutions for himself.

Adults who guide the development of young children must recognize their need for encouragement and support. Adults must seek to supply an environment which provides for physical safety, yet is challenging enough to stimulate the child to explore and to discover. The adult must be ready to help each child raise questions so that he may re-examine his situation and become dissatisfied with his current solutions and move on to greater competency.

Summary

If we ask ourselves "What is the young child's world like?" we can answer: It is a subtle combination of reality and fantasy. It is a world of joy through touching, tasting, smelling, hearing, and seeing! It is a world of pleasure found in bodily movement. It is a world of adventuring and discovering through manipulating of concrete materials. It is a world of spontaneity, newness, and beauty. It is a world with giant size problems that can be frightening, frustrating, defeating, and painful. It is a world of magic where the golden threads of make believe make everything possible.

REFERENCES

[1] Almy, Milly, Lecture notes in Child Development, Teacher's College, Columbia University, 1960.

[2] Fantz, Robert L., "The Origin of Form Perception," *Scientific American*, 1961, 204 (5) pp. 66-72.

[3] Landreth, Catherine, *The Psychology of Early Childhood*, New York: Alfred Knopf, Inc., 1958, p. 87.

[4] Mead, Margaret, and Macgregor, Frances, *Growth and Culture*, New York: G. Putman's Sons, 1951.

[5] Erickson, Erick H., *Childhood and Society*, New York: W. W. Norton & Company, Inc., 1950.

[6] Stuart, Harold C. and others, "The Growth of Bone, Muscle and Overlying Tissues as Revealed by Studies of Roentgenograms of the Leg Area," *Monographs of the Society for Research in Child Development*, Vol. (5) Nov. 3, 1940, p. 45.

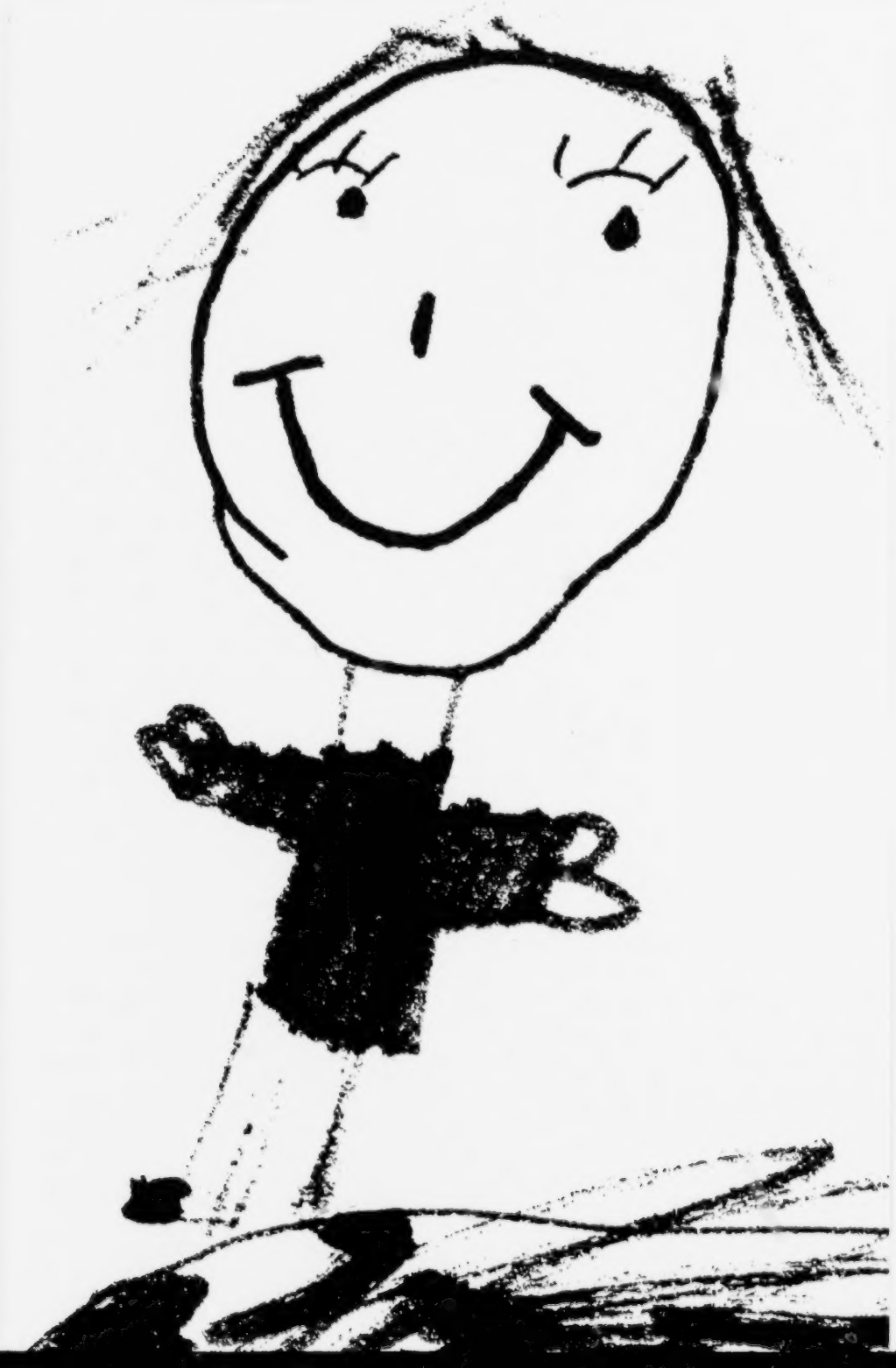
[7] Piaget, Jean, *The Language and Thought of the Child*, New York: Meridian Books, 1955.

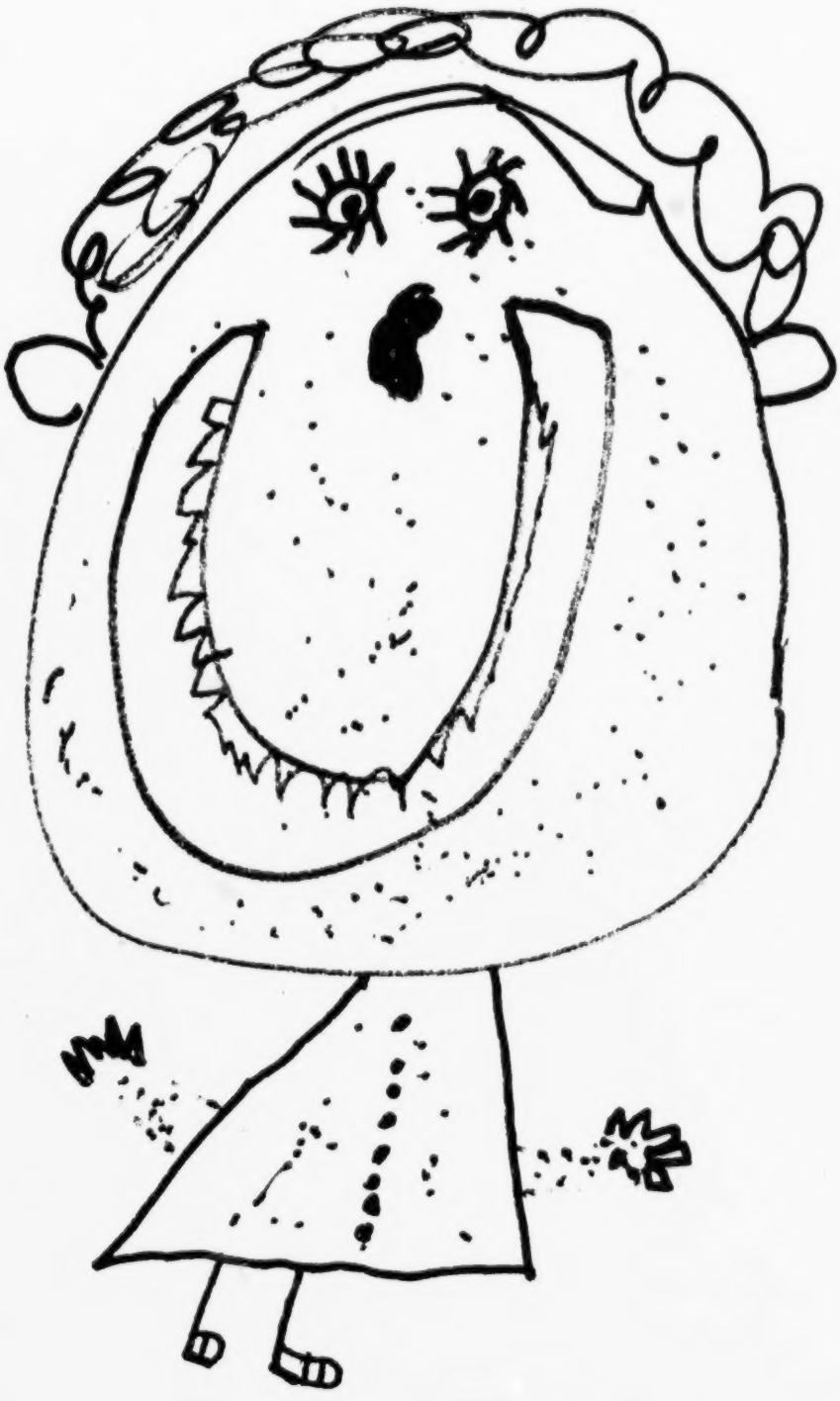
[8] Rice, C., "The Orientation of Plane Figures as a Factor in their Perception by Children," *Child Development*, 1950, Vol. 1, p. 111-143.

[9] Brian, Clara, and Goodenough, Florence L., "The Relative Potency of Color and Form Perception at Various Ages," *Journal of Experimental Psychology*, 1929, Vol. 12, pp. 197-213.

[10] Huang, I., "Abstraction of Form and Color in Children as a Function of the Stimulus Object," *Journal of Genetic Psychology*, 1945, p. 66.
[11] Cook, W. M., "Ability of Children in Color Discrimination," *Child Development*, 1931, p. 303-320.
[12] Synolds, D. L., and N. H. Pronko, "An Exploratory Study of Color Discrimination," *Journal of Genetic Psychology*, 1949, 74, p. 17-21
[13] Johnson, B., and Beck, F. L., "The Development of Space Perception, 1. Stereoscopic Vision in Pre School Children," *Journal of Genetic Psychology*, 1941, 55, pp. 247-254.
[14] Thrum, M. E., "The Development of Concepts of Magnitude," *Child Development*, 1935, 6, pp. 120-140.
[15] Hicks, J. A., and Stewart, F. D., "The Learning of Abstract Concepts of Size," *Child Development*, 1930, I, pp. 195-203.
[16] Erickson, *op. cit.*
[17] Almy, *op. cit.*
[18] Inhelder, Barbel, and Piaget, Jean. *The Early Growth of Logic in the Child*. New York: Harper and Row, 1964.
[19] Bruner, Jerome S., "Social Psychology and Perception," *The Causes of Behavior: Readings in Child Development and Educational Psychology*. Allyn and Bacon, Inc. 1962, p. 369.
[20] Piaget, *op. cit.*
[21] Erickson, *op. cit.*

Lucile C. Perryman is associate professor of education at Queens College, City University of New York, and co-director of the School University Teacher Education Center, Queens. At the Center she works with college staff in leading beginning and experienced teachers to explore ways to help the inner city child to become a fully functioning human being. Dr. Perryman was born in Alameda, California, where she received her early education. She majored in fine arts in high school and was active in dance and little theater. She received two scholarships to the College of Arts and Crafts in Oakland, California, and then majored in both applied arts and art history at the University of California, Berkeley. She began her career teaching art and dance in private schools and teaching aesthetics through University of California Extension. During World War II she studied child development with Catherine Landreth and Nancy Bayley and then taught in nursery schools in California and Washington. Continuing her education, she earned an elementary and early childhood teaching credential. She received the M.A. from Mills College and the Ed.D. from Teachers College, Columbia. Dr. Perryman edited *Montessori in Perspective* and is the author of numerous articles and papers in the field of elementary and early childhood education.





RESEARCH ON THE ART OF YOUNG CHILDREN

LAMBERT BRITTAIN

In this article Lambert Brittain reviews a number of studies which trace artistic evolution in the preprimary years. The process begins with random marking at the age of about eighteen months. As mark-making, or scribbling, comes under cognitive control, the child learns how to reproduce certain configurations at will. These simple shapes become the building-blocks with which the four-year-old constructs visual images that stand for objects in the real world.

The emergence of representation out of scribbling seems to be a universal phenomenon, occurring in much the same way for all children, despite differences in culture and educational practices. One would expect that during a period of intense interest in early development and learning, this fascinating phenomenon would attract a great deal of scientific attention. This, however, has not been the case. Little has been done. The great cognitive leap which is evidenced in visual symbol making remains unexplained.

Researchers concerned with art in early childhood have directed their efforts elsewhere. Recently some investigations have concerned themselves with constructing systems for classifying scribbles. In order to reflect what is being done in the field, alternative categories for sorting-out scribbles are presented in this review. The value of this approach, however, is not evident. The superimposition of categories devised by an adult on the scribblings of children can become a dead end. Useful hypotheses have not emerged. The relevant questions remain, waiting to be asked.

In this review, Brittain includes a section on copying ability. Although copying is not art activity, these research findings are relevant; they reveal an inherent order of difficulty among simple configurations, indicate the limits of visual concepts at different ages, and show that the ability to discriminate shapes visually occurs much before the ability to copy them. Brittain's own research supports the belief that the ability to make configurations is tied to maturation and that attempts to accelerate the process are fruitless.

The final section deals with theories about child art. Several interesting and useful ideas are advanced. However, none of the theorists comes to grips with the crucial questions of preprimary art, i.e., is the idea of visual symbols discovered independently and anew by each child (as Christopher Alexander contends in another article) or is it suggested and rewarded by an adult who finding a red circle in a child's work praises him for making a nice apple, or is it imitative of what the

child sees other children and adults doing?

It is of interest to note what is omitted in this review. Nothing is said about the child as someone who can enjoy art. This omission reflects the researcher's neglect of the development of the aesthetic senses in the young. Although the young child seems to draw or paint to express his idea rather than to create a work of art, he does have a concept of beauty. Two-year-olds use the world "pretty" appropriately although they may apply it to different objects than the adult would choose.

In these times there is considerable difference of opinion as to the kind of educational environment that best serves young children. Brittain favors a supportive-permissive atmosphere. The teacher, he believes, ought to encourage the child by showing interest in what he does. One way of doing so is asking the child "What is it?" (Some authorities, however, including Polly McVickar and Lois Lord in this volume, object to this question.) He is critical of clever, teacher-directed art projects. He questions the value of trying to teach three-year-olds to copy geometric shapes, a task which can be accomplished much more efficiently at age four or five.

He values scribbling as the natural expressive means of the child and regrets that so many teachers and researchers view scribbling as a way to develop coordination and dexterity or as therapy, rather than as an artistic, creative activity of intrinsic value. He urges nursery school teachers to study the work of their charges and to relate their observations to those reported in the literature.

Introduction

Recently psychologists and educators have become increasingly aware of the importance of the years in a child's life before he goes to school. The first few years of life show a tremendous amount of growth as the child develops from a fragile bundle of life at birth to a walking, talking individual who enters school, able to cope with many situations, and to operate as an independent human being.

Education in the past has been primarily concerned with the ages from six to sixteen. Recently research on the earlier years of life, has given some indication that unless we can provide an improved environment for children before they ever arrive in elementary schools, much of their potential may never be realized. Child psychologists and educators are beginning to influence preschool education and public funds have become available. Project Head Start has made it possible for some disadvantaged children to benefit from preschool education. Nursery schools have begun to change their role from that of a pleasant social babysitting institution to one of importance in the educative process. The literature on early childhood has expanded greatly in the past few years, and experimentations with rich environments for the very young are being attempted.

However, comparatively few studies have been done of the art of preschool children. Probably the biggest reason for this lack of interest in the drawings of young children is the fact that most of the products created during the first four years of life are essentially scribbles. An adult who is used to looking at art from a representational viewpoint may often dismiss the scribbles as unrelated to visual images or even as a waste of drawing materials. This attitude is sometimes reflected in even the better nursery school settings, where prescribed activities for youngsters include mass producing a variety of art products which have been preplanned by the nursery school teacher. Using stencils, pasting paper chains, stringing macaroni, decorating paper plates, filling in dittoed sheets, putting colored toothpicks into styrofoam balls, and all the projects for Thanksgiving, May Day, etc., indicate that many nursery school teachers may be ashamed of the natural drawing expression of their charges. However, as soon as the subject matter becomes recognizable, adults do take an interest in what children draw. In fact, the free and spontaneous manner of painting which most children exhibit at four or five years of age is frequently openly admired by artists and teachers alike. Of course, children do not do their art with a finished product in mind, and adults often feel they have to "rescue" such paintings before the color gets muddy or the image disappears.

Nearly every nursery school or kindergarten devotes a fair proportion of time to art activities. It seems too bad that this amount of time is gradually reduced with each grade level, until we find that only a few high schools offer art, and that few students elect it when it is available. At the same time the interest of art educators has been primarily in inverse relation to the amount of time spent in art activity at different educational levels. A good deal of research has been done with college students, some with high school students, a bit with younger children, but the preschool and early school years are only now becoming recognized as important areas for investigation and study.

Most of the literature in the area of art education that is available for teachers and parents of preschool children deals primarily with how the teacher can produce cute projects, and not with an understanding of the natural development of art. However, there have been a few studies of the prerepresentational art of children. These studies indicate that art activity can be a purposeful learning experience in itself without the need for such specific guided art experiences, that the art of children follows a general developmental pattern, and that art activities are a natural form of expression. The following sections of this review deal with research of the art of the young child, the development of his abilities, and some of the theories surrounding their development.

Developmental Stages in Young Children's Art

The first marks that a youngster makes at about eighteen months

or so appear to be random lines. He gradually scribbles with greater control, developing the ability to make a variety of shapes, until about the age of four when the first recognizable representational object is portrayed. Most children at the age of six are obviously representing parts of their environment. The child starts marking with no definite product in mind, and is incapable of representing a definite object; but by the time he arrives in school, he is usually able to make a recognizable representation of a man. However, his representations of other objects and his way of handling space may be difficult for an adult to understand.

The first apparent stage in scribbling development seems to be that of disordered scribbling, which usually consists of a haphazard array of lines and which seems to be primarily the result of kinesthetic activity. The second stage is that of controlled scribbling, in which the child develops a visual control over the marks he is making. The third stage is the "naming of scribbling"; at this point the child has a distinct purpose in making the marks, and he may give names to what he draws (Lowenfeld and Brittain, 1970).

One of the largest collections of nursery school drawings was made by Kellogg (1969). She identified 20 basic scribbles, starting with a dot, including various linear motions which do not necessarily follow any set order, a variety of loops, and an imperfect circle. Her assumption is that children develop a vocabulary of basic scribbles which form the basis for subsequent drawing or painting. She feels these marks are biologically based. One of the forms that is emphasized in her theory is the mandala, which is simply a crossed circle. This is seen as the basis for later drawings of humans, flowers, and other objects.

Eng (1954) made some careful observations of the drawings done by her niece and compared these observations with studies done by others. She suggests that there are only three stages in the scribbling process. These are a stage of wavy scribbling, followed by circular scribbling, and then a stage called variegated scribbling, which includes straight lines, angles, and other shapes. Eng also found that younger children scribble in dense masses in the middle of the paper, whereas older children use the whole paper and finally scribble in isolated areas.

In a descriptive study of children's prerepresentational drawings, Holladay (1966) found seven different steps in the scribbling process. These are called 1) differentiated scribbles, 2) random length directional marks, 3) longitudinal scribbles, 4) circular scribbles, 5) individual circles, 6) combination of lines and shapes, and 7) geometric drawings or decorative drawings with some degree of symmetry. Holladay points out that these stages do not necessarily follow one another in a neat order, and that several could even occur in one drawing.

There are other ways of classifying the scribbles that children make, but more important is the fact that these all tend to follow the same general pattern. That is, the first mark that the child makes is somewhat random and is tied primarily to motor activity. This is fol-

lowed by some control over what he is doing, and the lines become more complex. He begins to relate his scribbles to the visual world, although there is some indication that the sense of touch, the sense of smell, and kinesthesis are also portrayed in scribbles. Finally, at about the age of four or five, he is drawing recognizable objects. It is obvious that the drawing changes as the child himself matures.

Although a child deals visually with his environment early in life, the relationship between the child and the visual world develops slowly in his drawings. It is usually not until about four and a half years that a youngster draws a recognizable form, and this is usually a head-feet representation of a man. By the time a child reaches the first grade he is usually able to draw anything he has experienced.

At first, things tend to float around the page with the placement seemingly resulting from putting each shape where there is room rather than in some objective order. But soon the drawings become oriented from a base line which appears across the bottom of the page, and sometimes a sky line which appears at the top of the page with "air" in between.

Often the early markings of children are classified under motor development by child psychologists (Landreth, 1967), but the development of drawing abilities is obviously related to the total development of the child: his perceptual, cognitive, and motor development combined with his feelings of self and his relations to the environment. It is important to remember that any simple explanation or categorization of drawing does injustice to the complexity of the creative process.

Although we speak of these differences in children's drawings as occurring as steps in their development, we find great differences in how children draw. Just as we expect children to differ in physical growth or in intelligence, their drawings will also differ, making it difficult to tell where one stage stops and another begins. This is increasingly the case as children grow older (Lark-Horovitz, 1959).

Development of Drawing Ability

Although copying may be a questionable art form, it is interesting to note that the ability to copy particular geometric forms parallels the ability to draw other objects in recognizable form. That is, the three-year-old, generally speaking, cannot copy a square; but by the time he is in his fourth year he can do so with some success. Similarly in drawing behavior, most three-year-olds are scribbling; but by the time they reach four years of age they are often drawing recognizable objects in their art work.

Related here is the interesting phenomenon that children can quite early in life pick out a certain shape from a series, or identify a square if it is mixed in with a group of other geometric forms. This can be done one to two years before a child can actually copy this same form. This phenomenon has been examined in some detail (Olson and Pagliuso, 1968). Obviously there is no immediate connection between

what the eye sees and what the hand produces. Drawing is much more than visual awareness coupled with manual skills, but is bound up with a child's conceptual development.

Maccoby (1968) feels that recognition of forms takes place much earlier because the child perceives a whole, whereas in copying he must discriminate parts. However, there does not seem to be any evidence that discrimination training can improve copying abilities. The age at which children can copy particular forms is quite well established. At the age of three, most children can copy a circle. By the age of five most children can make a reasonable facsimile of a square, and by six they can copy a triangle. Not until the age of seven or so can a child copy a diamond. Studies by Gesell (1940), and Ilg and Ames (1964), have given ample documentation for these ages. Sometimes these copying exercises are used as indications of developmental levels in intelligence tests.

Apparently these steps are determined by the whole maturational process and not by the development of particular copying skills. Brittain (1969) attempted to teach three-year-old nursery school children how to draw a square by utilizing many different processes. It was concluded that although some of the children increased in their ability to draw squares, others decreased in ability, and the total improvement was no more than might have occurred without the training exercises. The children were retested some months later, after they had turned four, and most of them could draw squares no better than children who were not given the benefit of the square-making exercises.

Some material available for Head Start and kindergarten teachers emphasises the importance of teaching children how to draw the basic geometric shapes, as an "aid" to the drawing of more complex forms. From the above research it appears that such teaching efforts would be a waste of time. It seems rather pointless to laboriously teach a three-year-old how to make a square when that same child will perform the task more easily and without frustration at the age of four or five. It is logical that the focus of teaching should be that of encouraging the child's expression at his own level of development rather than trying to make him perform like an older child.

Observational Studies

All events are unique, and perceptions vary from individual to individual. To a great extent the area of psychology turned its back upon descriptive studies in favor of carefully worked out experiments, with quantities of statistical data. In the area of art education research, as one can see in the recent literature, less and less recognition has been paid to individual teachers' comments on the behavior of children as compared to the statistical data gathered from a large number of children. Yet in recent years Piaget (1956) has tended to reverse this trend and has shown that much can be learned by careful observation and questioning of children.

Most nursery school teachers would benefit from careful observations of their own group of children if they could only remove themselves from the active scene temporarily. They could then relate their own observations to the findings of others.

Holladay (1966) described some of the aspects of children's pre-representational work, observing 64 children from two through five years of age. He found that at the age of two the typical scribbling child has little control over his drawing tool. He grips his pencil or crayon in a variety of ways and spends about one minute on a drawing. He can sometimes make an acceptable copy of a line, but nothing more complex. By the age of three his grip on a pencil is closer to that of the usual adult grip, and he can control the pressure he makes while drawing. He spends about twice as long on drawing as does the two-year-old, and his drawings are much more controlled. He can not only copy a line but can also copy a circle, though not a square or rectangle. By the age of four the child is able to adjust his pressure according to the characteristics of his drawing instrument, and he holds his crayon as an adult would. He usually spends more time on his drawings, balances his pictures, and has good control over what he does. He is beginning to make representations. Four-year-olds can typically copy a line, a circle, and a square, but have trouble with diagonal lines. Holladay found that by the age of five a child readily adjusts to a variety of drawing instruments; he selects certain colors for specific parts of his drawing, usually verbalizes about what he is doing, often uses the adult normal grip, and copies everything except diagonal lines.

Alschuler and Hattwick (1947) in a two-volume report related the behavioral characteristics of 150 nursery school children to their paintings. The basic assumption is that children reveal their emotional experiences and adjustments in their paintings. Although they emphasize that art work cannot be interpreted out of context, apparently those children who consistently painted in warm colors were freer in their emotional behavior and more warm and affectionate in their relationships than children who preferred blue or black. Subsequent work has raised questions about these conclusions. Corcoran (1954) found that children used colors in sequential order when painting at an easel. Apparently Alschuler and Hattwick did not keep a record of the location of the paints. Biehler (1953) found that children tended to paint colors directly over where they were located in the easel tray; he raised some serious questions about the methods used in the Alschuler and Hattwick study and concluded that they went beyond a conservative estimate of their results.

It is apparently important for even young children to see that they can make marks on a page. Goertz (1966) found that two-year-olds who used a non-marking pen did not scribble as long as when they could see their marks. Goertz found that interaction with others may be an important variable; those children who had a lot of drawing experience, and who had older siblings and interested parents, had slightly ad-

vanced drawing ability.

A study by Douglas and Schwartz (1967) compared the work in clay of four-year-olds. One group was shown various ceramic pieces; questions and comments were directed to the children about the art work; and then the children worked in clay. They did much better and worked for longer periods of time than did a control group who only saw the ceramic pieces and had no such discussion. However, differences might be attributed to differences in teacher personality and to the interest and enthusiasm of an adult which rubs off onto children, rather than to the method of teaching. In a study by Brittain (1969) it was found that an interested adult used as a sounding board increased the length of time that the nursery school youngster would draw and also increased the amount of verbalization that took place. Brittain concluded that to ask a child "What is it?" in a non-threatening manner may be the most important thing a nursery school teacher can do.

Little has been published that shows that one kind of art experience is better for the young child than another. Most of the literature on nursery school education bypasses the development of artistic skills or the creative abilities and instead justifies art as a means to develop coordination and dexterity. Sometimes art is used primarily for its therapeutic value and to make children happy (Read, 1960).

However, in a study of the influence of the environment upon nursery school children's drawings (Reichenberg-Hackett, 1964), it was found that children made drawings that were rated higher if they were in a supportive-permissive atmosphere than if they were in an authoritarian or *laissez-faire* atmosphere. With older children the literature supports these conclusions. The interested supporting adult plays a vital role in the art experience of children.

Theories of Child Art

Just why children draw the way they do is a tantalizing problem. Arnheim (1954) has speculated that the child does not see the scribble as being different from that which he is trying to portray. The earliest representation of a man may be seen as a shape or closed form which is enough to signify a man to the child who is drawing it. He points out that one can read a novel without ever being sure how the hero's name is spelled, and yet this does not hinder one's comprehension of the novel itself (Arnheim, 1968).

Kellogg (1967) infers that children's drawings and scribbles repeat an evolutionary pattern that follows the evolution of drawing in the human race. She says that the children of today in nursery schools repeat the same markings that paleolithic man made upon the walls of his cave. However, this theory that ontogeny recapitulates phylogeny has now been pretty well dismissed in the psychological literature. Anyone who has seen the prehistoric art on the walls and ceilings of caves in France or Spain realizes that this art form is much closer to the more sophisticated work of modern artists than it is to the scrib-

bling of children.

Piaget (1956) considers the age from two to seven to be included in a preoperational period. The child is egocentric, that is, not able to take another person's point of view, and is very concrete minded. He may not be copying an object at all but rather relates what he sees to previous understandings. An extension of Piaget's thoughts might be to assume that the child is not drawing anything specific outside himself in his scribbles but rather is portraying his feelings and emotions about objects. When he is drawing a dog running, he is not portraying the visual elements of the dog, but is portraying those aspects of running that make it concretely a motion. In other words, the crayon itself is running, or, better, the child himself is doing the running as if he were the dog he is portraying. In a sense, then, the child becomes the scribble.

This is closely related to the term self-identification as originally advanced by Lowenfeld (Lowenfeld and Brittain, 1970). It is considered important for the child to identify with what he creates, which can happen only when the experience and expression are controlled by the individual and the project is truly his own. It is hypothesized that such self-identification is a prerequisite to identification with others, and that it aids the child in understanding and cooperation.

Jameson (1968) feels that the sensitive, imaginative child paints what he knows, not what he sees, with a logic of his own. As the child uses symbols to communicate, these symbols become language. He further states that communication through graphic expression is a beginning of academic learning.

Grozinger (1955) points out that children instinctively draw bimanually, and recommends that youngsters be given the opportunity to draw with both hands, coordinated with breathing. He emphasizes the importance of motor activity such as rotary movements and places importance upon the actual manipulation of objects.

Some theories relate the child's scribbling to the development of perceptual abilities. The problem of differentiating an object from the space around and behind it, is looked upon as a complex task. Others see children's drawings as being primarily behavioral and cognitive. Harris (1963) asserts that a child's drawing reveals the sum of the discriminations he has made about that object and as such is part of his conceptual development. Harris feels that because early perceptions are limited, drawing representation is simple and schematic; as the child grows older, he shifts to relying upon deductive reasoning, and his spontaneous drawings diminish.

Lewis and Livson (1967) found that development in drawing is characterized by successive discovery of more adequate means of depicting the essential characteristics of three-dimensional objects within the limits of a two-dimensional medium. Young children typically represented a cube by a square, one side of the figure. Older children drew a cube by showing several sides in one plane. These were in time replaced by drawings showing several sides in more than one plane, but

incorrectly related. Finally the spatial relationships are shown correctly. The developmental process culminated in accurate spatial representation. However, progress toward this goal is not direct, in that the direction of change was from a flat although correct representation, to more detailed but naturalistically incorrect representations, and finally to an accurate, three-dimensional equivalent.

Summary

The literature is quite definite in asserting that children's scribbles go through progressive stages of development. Just how the various stages are described differs with each investigator, but the earliest scribbles tend to be somewhat random markings and primarily a striving for motor control. The next stage, at about three years of age, shows us that the child has developed competency in this task and enjoys watching the lines he makes. He will also discuss these with an interested adult. By the age of four, the scribbles become quite complex and the representational attempts begin, often with a head-feet symbol for a man appearing first. By the age of five most youngsters are drawing people and objects that are readily recognizable to adults, although these drawings often bear little relation to a visual likeness. By six, the base line appears and objects begin to march across the page in orderly fashion. Copying figures also follows the same developmental pattern, and the diagonal seems to be a line that is difficult for children below first grade to copy.

There is some indication that an interested adult enhances the art process for young children. Perhaps this is because the adult's presence gives importance to the activity and because the adult serves as a sounding board. Apparently the *laissez-faire* approach to art at the nursery school level may not be the best environmental condition for art. However, there seems to be no theoretical basis for assuming that teacher-directed activities such as the making of a turkey out of candy wrappers for Thanksgiving will benefit the child's concept of himself or develop his ability for self-expression.

It is obvious that scribbling is an indication of the child's total development and as such follows a pattern in much the same way as learning to walk. Scribbling is an important part of the youngster's communication with himself and with the outside world. As such, it needs an important place in the activities of young children.

REFERENCES

Alschuler, Rose H., and Hattwick, La Berta W., *Painting and Personality*. Chicago: University of Chicago Press, 1947.

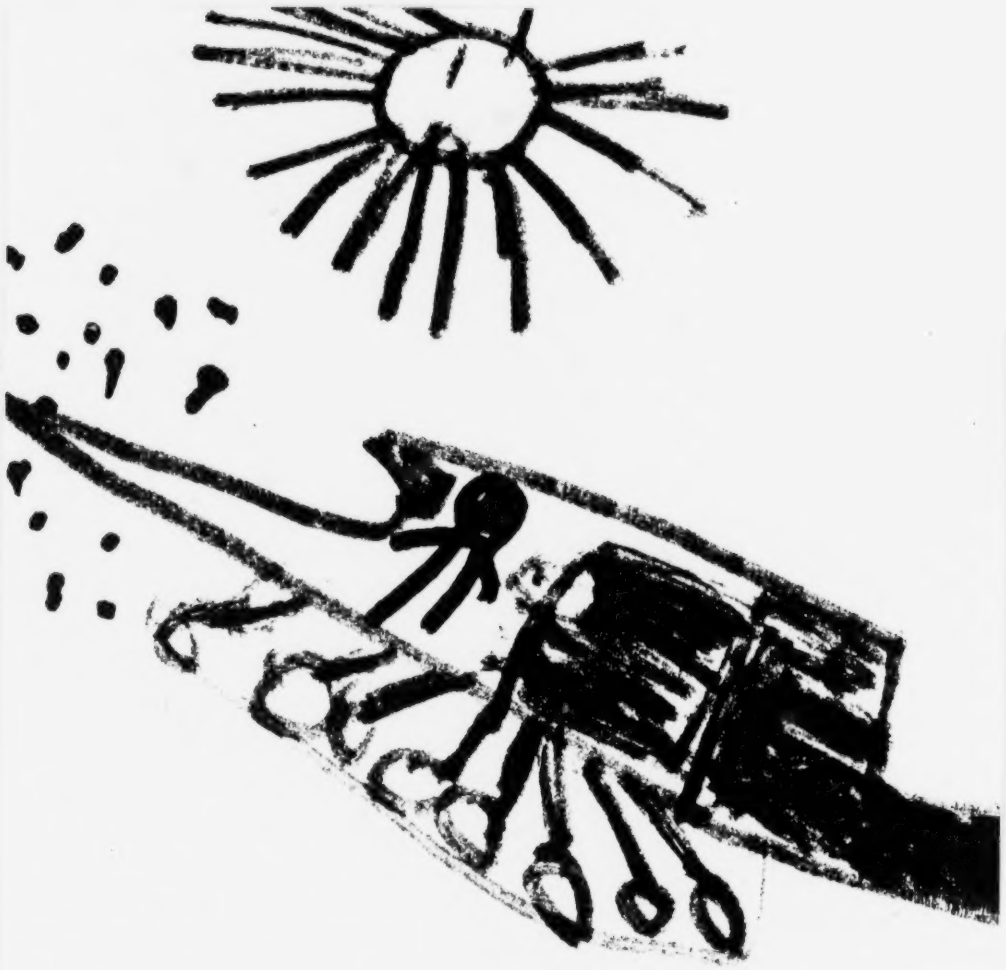
Arnheim, Rudolf, *Art and Visual Perception*. Berkeley: University of California Press, 1954.

Arnheim, Rudolf, "Comments and Discussion," *Ontario Journal of Educational Research*, Vol. 10, No. 3, Spring 1968.

Biehler, Robert F., "An Analysis of Free Painting Procedures as Used with Preschool Children" (Unpublished doctoral thesis, University of Minnesota, 1953).
Brittain, W. Lambert, "Some Exploratory Studies of the Art of Preschool Children," *Studies in Art Education*, Vol. 10, No. 3, Spring 1969.
Burt, C., *Mental and Scholastic Tests*, London: P. S. King and Son, 1921.
Corcoran, Ambrose L., "Color Usage in Nursery School Painting," *Child Development*, Vol. 25, No. 2, June, 1954.
Douglas, Nancy, and Schwartz, Julia, "Increasing Awareness of Art Ideas of Young Children Through Guided Experiences with Ceramics," *Studies in Art Education*, Vol. 8, No. 2, Spring 1967.
Eng, Helga, *The Psychology of Children's Drawings*, London: Routledge and Kegan Paul, 1931.
Gesell, Arnold, et al., *The First Five Years of Life*, New York: Harper and Row, 1940.
Goertz, Elizabeth, "Graphomotor Development in Preschool Children" (Unpublished master's thesis, Cornell University, 1966).
Goodenough, Florence, *Measurement of Intelligence by Drawings*, New York: Harcourt, Brace & World, 1926.
Grozinger, W., *Scribbling, Drawing, Painting*, London: Faber & Faber, 1955.
Harris, Dale B., *Children's Drawings as Measures of Intellectual Maturity*, New York: Harcourt, Brace & World, 1963.
Holladay, Harlan, "An Experimental and Descriptive Study of Children's Pre-Representational Drawings" (Unpublished doctoral dissertation, Cornell University, 1966).
Ilg, F. L., and Ames, L. B., *School Readiness*, New York: Harper, 1964.
Jameson, Kenneth, *Art and the Young Child*, New York: The Viking Press, 1968.
Kellogg, Rhoda, *Analyzing Children's Art*, Palo Alto: National Press, 1969.
Kellogg, Rhoda, *The Psychology of Children's Art*, New York: Random House, 1967.
Kerschensteiner, D. G., *The Development of Drawing Talent*, Munich: Gerber, 1905.
Landreth, Catherine, *Early Childhood*, New York: Knopf, 1967.
Lewis, Hilda Present, and Livson, Norman, "Correlates of Developmental Level of Spatial Representation in Children's Drawings," *Studies in Art Education*, Vol. 8, No. 2, 1967.
Lowenfeld, Viktor, and Brittain, W. L., *Creative and Mental Growth*, 5th ed., New York: Macmillan, 1970.
Luquet, G. H., "L'Evolution du Dessin Enfantin," *Bull. Soc. Binet*, 1929.
Maccoby, Eleanor, "What Copying Requires," *Ontario Journal of Educational Research*, Vol. 10, No. 3, Spring 1968.
Olson, David, and Pagliuso, Susan (eds.), "From Perceiving to Performing: An Aspect of Cognitive Growth," Special Issue, *Ontario Journal of Educational Research*, Vol. 10, No. 3, Spring 1968.
Piaget, Jean, and Inhelder, B., *The Child's Conception of Space*, London: Routledge and Kegan Paul, 1956.
Read, Katherine H., The *Nursery School*, Philadelphia: W. B. Saunders, 1960.
Reichenberg-Hackett, W., "Influence of Nursery Group Experience on Children's Drawings," *Psychological Reports*, No. 14, 1964.

W. Lambert Brittain writes from the perspective of a researcher and art educator. He is professor of Human Development and Family Studies at Cornell University. His special interests are in child development and creativity. He is presently directing a research project

funded by the National Laboratory on Early Childhood Education concerned with the drawings and scribbles of preschool children. Dr. Brittain was born in Boston. He received the B.F.A. from Syracuse University and the M.Ed. and Ed.D. from The Pennsylvania State University. He has taught in the public schools of Fabius, New York, and was art supervisor in Massena, New York, and he has also taught at Miami University and the University of North Carolina. On Viktor Lowenfeld's death in 1960, Lambert Brittain assumed responsibility for future editions of Lowenfeld's widely acclaimed text, *Creative and Mental Growth;* Brittain co-authored the fourth edition, 1964, and the fifth, 1970. Lambert Brittain is active in professional organizations such as the National Art Education Association, the NAEA Eastern Regional, the International Society for Education Through Art. He has served as advisory editor for *Studies in Art Education.* His articles have appeared in numerous professional journals.



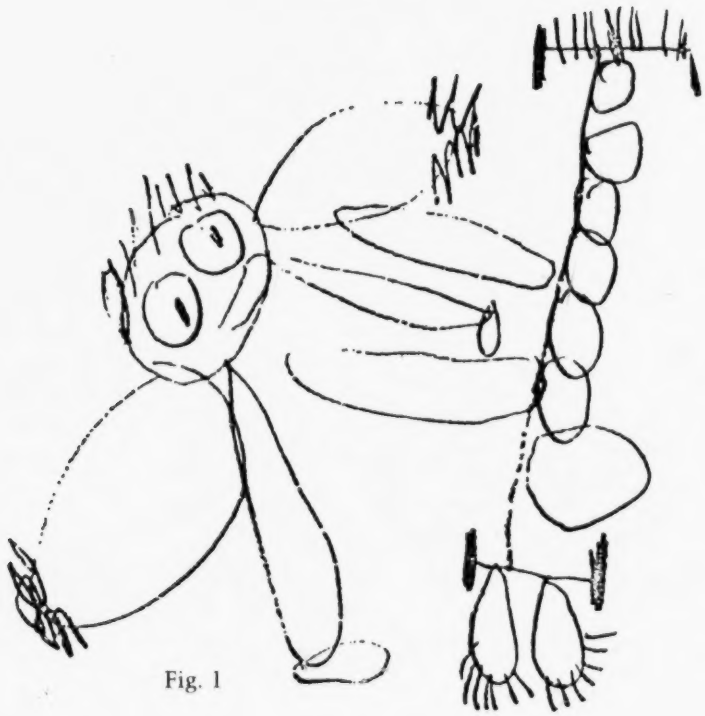


Fig. 1

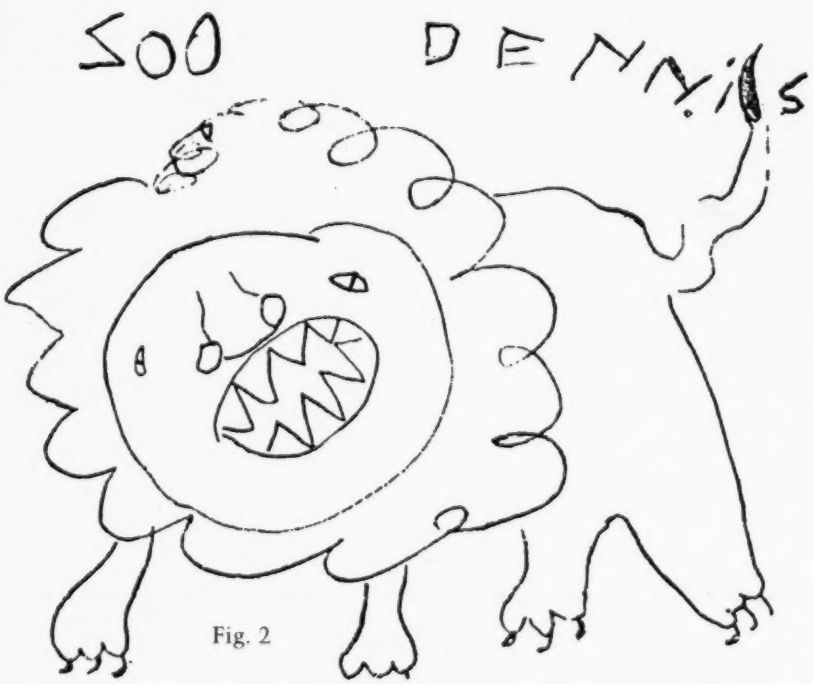


Fig. 2

THE ORIGIN OF CREATIVE POWER IN CHILDREN*

CHRISTOPHER ALEXANDER

Many scientists search for the well-spring of creativity. Each one seems to look at the territory he knows best. The psychoanalysts look to conflicts in the unconscious, or to the accessibility of ideas that lie in the preconscious. Personal theorists have discovered that the personality profiles of highly creative persons distinguish them from their less creative counterparts. Others believe that the source of creativity is in the mind, and is really an aspect of intelligence or a matter of cognitive style. Those who are concerned with perception believe that creativity stems from the purity with which one views the world. Christopher Alexander, in the article that follows, takes still another view. He argues that creative power originates in a process by which symbolic forms become distinct from one another. He suggests that the young child has a need to overcome ambiguity in his drawings so that he can communicate more effectively through them. Clear schematic forms arise through a process of leveling and sharpening shapes that are embedded in scribbles.

In a well documented and carefully reasoned exposition Alexander compares and differentiates child art and primitive art. He contends that all art has a schematic base. All artists, and indeed, everyone engaged in a creative enterprise search for solutions within constraints. For the child the constraint is the limited array of forms available to him. Whereas some authorities reject the notion that a child can produce "art," Alexander sees a commonality in art and child art; great form, he contends, is distinguished from all possible alternations. The characteristic of artistic development in early childhood is the striving to differentiate form. This, according to Alexander, is the source of creative power.

Man is the most striking piece of organized matter we know in the universe, and he possesses the ability to organize material more strikingly than any other organization of matter does. The ability to shape thought and matter almost has to be one of the central features of any comprehensive view of man. Yet the source of this ability is a very great puzzle. How is it that an aggregation of matter which we call a man, born plastic but creatively inert, comes to be able to shape matter in an organized fashion?

By seeing the act of drawing as a game carried out within the rules prescribed by the available schemata, we shall try to discover the source of the child's ability to organize form. A simple enquiry about

*Reprinted by permission of the British Journal of Aesthetics.

the origin of such schemata shows us that the course of their development itself accounts for the child's creative ability; and that the development of the creative ability to organize the form of a drawing may be seen as a purely residual effect of the growth of schemata.

The kind of play behaviour we call 'drawing' is not as mysterious as it is made out to be. Piaget points out that every developed kind of play is a pattern of activities constrained by some arbitrarily chosen set of rules which mark it off from the domain of all possible activities.[1] Just as it is true of games, so it is also true that a particular individual's drawings are governed by a set of rules. The rules or possibilities expand and change as the individual grows older, it is true, so that he is able to play more and more games within these wider frameworks. But any drawing he produces is always generated under constraint.

In many games the rules are known explicitly. In drawing this is not so. In fact, in a sense, the artist, though aware that he is constrained, is perhaps less conscious than anybody of the rules which bind him. He does not realize just how narrow the domain of possibilities available to him is. To take an example, look at the picture of a man with a saw (Fig. 1). It was drawn by a five-year-old boy,[2] who was certainly not aware that we might find the use of circles to represent teeth remarkable. One of the rules governing his play, apparently, just at present, is that many things are to be drawn in terms of circles. This example should make it clear how the rule-boundedness of drawing does not consist of externally imposed rules, but of constraints which are implicit in the act of drawing.

It is often said that the artist solves problems within fixed sets of rules, but it is only rarely that one thinks of these rules as being real constraints, or that one considers their source. The first thing to establish is that the act of drawing something depends principally on the existence of pre-established schemata, and does not involve direct imitation from nature in the photographic sense.[3] The point being made here is not that 'Art' depends on what you can call lushly 'the artist's interpretation,' but that the schemata of the drawing were invented before the drawing; most of the basic forms which appear in a drawing were known to the artist before the drawing was done, and it is this set of available schemata which constitute the rules within which drawing can take place. But what is the source of such schematic systems, and why do they develop?

I

When we wish to understand the origins of a complex human phenomenon, we must first be sure we can identify the difference between an undeveloped (primitive) version and a developed version. In the case of drawing it has been suggested that we look at one of two kinds of development: either at the 'phylogenesis' or historical development of drawing, as the art historian does; or at what happens when the phenomenon comes to life in a single individual (its 'ontogenesis') as the

developmental psychologist does. In both cases, unfortunately, we find that the difference between primitive and sophisticated drawings is less simple than it seems.

For some thirty or forty years, starting about 1900, it was widely held that there was just one basic kind of development from primitive to full-grown art, and that both the ontogenetic and the historical developments were instances of it.[4] This happened because people noticed that the primitive art then being seen for the first time, could be distinguished from the realistic paintings currently being turned out by the academies in many of the same ways that one distinguishes a twentieth-century child's drawing from those of a twentieth-century Western adult. The theory was made more convincing by the fact that certain cave paintings dating from very early periods were known, which were just a little like the scribbles of early childhood. Some archaeologists were so impressed by this indeed, and by the steady development which they assumed must have taken place between these early palaeolithic scribbles and the painting of civilized times, that one of them even proposed a typology based on successive stages of a child's development, in which the fragments of cave art were to be dated historically by matching them with their counterparts from the chronology of a child's development.[5]

Let us look at some typical examples of 'primitive' or 'poorly developed' drawings (Figs. 2-6). The magnificent lion is by a five-year-old American boy,[6] the wolf's head by a Kwakiutl Indian,[7] the tree by a thirty-year-old imbecilic girl with an IQ of 49,[8] the pond with the trees round it by a Dakota Indian,[9] and the children playing ring-a-ring-a-roses by another small boy.[10] Both the lion's teeth and the leaves on the tree are far too big (though this is just what makes them powerful graphically); the wolf's head is flat and two-dimensional; the children are all drawn as if they were lying down with their feet towards the centre; the trees around the pond are again apparently lying down.

Clearly these drawings are not like the paintings being shown in the academies at the turn of the century. They lack depth and perspective. They lack consistent scale. They contain apparent contradictions in viewpoint. They seem altogether more schematic than pictorial.

For a long time it was assumed that these attributes were characteristic of all kinds of undeveloped art, and that it was therefore necessary to explain the difference between art with these characteristics, and the 'developed' art being seen in the galleries. The most widely accepted account of this difference went roughly like this: '*Neither the child nor the primitive man has yet succeeded in escaping the primitive stage at which objects are depicted* conceptually, *instead of* perceptually. *That is, they picture the essential features of the object as they remember them, rather than as they see them, no matter what anomalies this mode of representation leads them to introduce. They are incapable, as yet, of depicting an object as it appears, because they cannot grasp it as it really is.*' This theory was presented in one of its

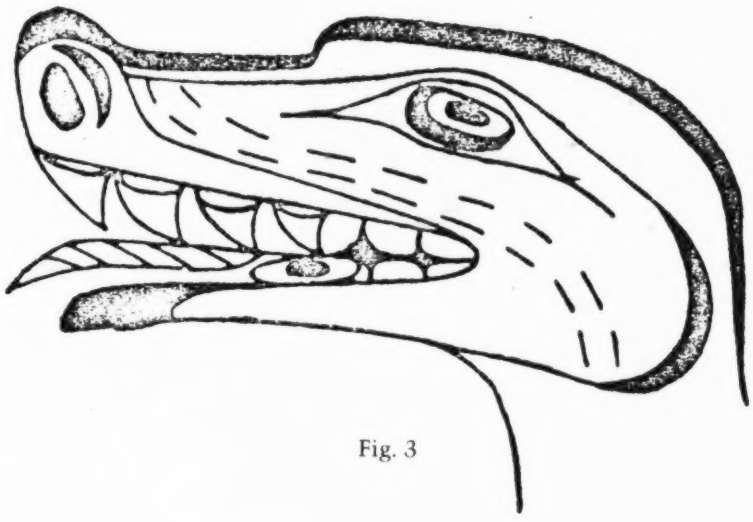


Fig. 3

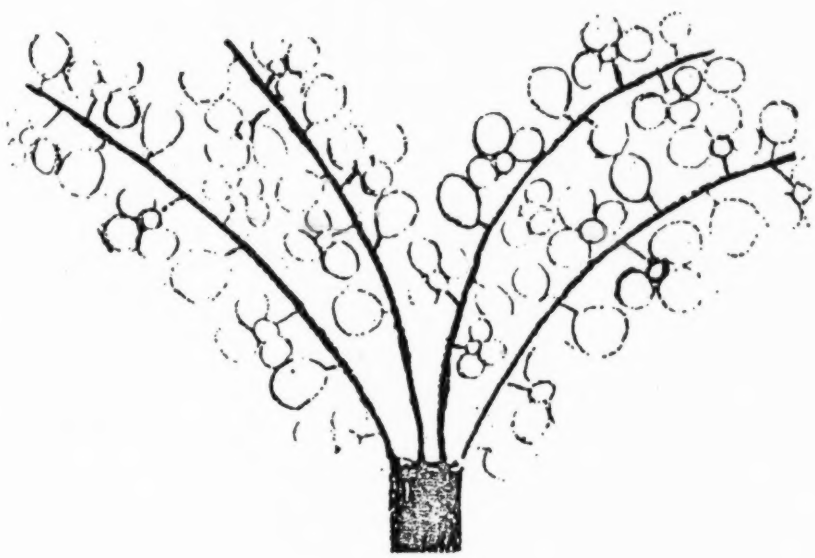


Fig. 4

strongest forms by the art-historian Loewy.[11] The anthropologist Levy-Bruhl lays it on even thicker. He claims that the various features of primitive drawings – formalism, transparency, turning over, spacelessness – are based on features common to the psyche of the child and primitive man, on their want of firm voluntary attention, on the weakness of their power of abstraction, or logical, or realistic thinking. According to Levy-Bruhl, we derive our representation from the object we are drawing by imitating, while the primitive mentality first draws a shape and then invests it with meaning. We look at a donkey, and then copy it supposedly. The primitive draws a shape first, then names it. Levy-Bruhl cites the case of the aborigine who draws a circle and sometimes calls it a gumtree, sometimes a frog, sometimes empty decoration, according to its location.[12] Karl Bühler also believed drawing from memory rather than from the object to be characteristic of primitives. He says that the primitive tendency to draw from memory leads primitive draughtsmen to represent what he called the "orthoscopic' forms of the thing represented.[13] These are the forms which correspond to the accidents of its appearance. A table will be made rectangular, not trapezoid, beetles will be drawn from above, a man's eyes and mouth from the front, his nose in profile: everything from its most characteristic point of view.

All these supposed distinctions between schematic 'primitive' and realistic 'sophisticated' art rely on a much more clear cut difference between a seeing, knowing, and remembering than we actually encounter in cognitive behaviour. It is true that the child, when he paints a tree, does not look at the tree but merely reproduces the conceptual schema for a tree which he happens to have learnt. But we do the same, and so does the artist.[14] All the points made, Lowey's assertion that children and primitives draw from memory rather than from nature, Levy-Bruhl's observation that they invest artefacts with special meaning rather than inventing a new artefact to make the desired meaning, and Bühler's theory of orthoscopic forms, all emphasize the schematic nature of primitive art. And in this they all seem to be substantially correct. Where they are mistaken is in trying to make out that there are kinds of drawing possible (our's for instance), which do not share their schematic base. A schematic base is characteristic of *all* art, not just of primitive or children's art. The only reason that this was not obvious from the beginning is that the artists of the academies made a deliberate attempt to obscure this aspect of their own work, and hoped to free themselves of it.[15] But the realism they were after is not the opposite of primitive art. Neither is realism the opposite of conceptual and schematic art. It is certainly a property of certain kinds of schemata that they produce illusions of reality more strongly than others: in Gombrich's words, they preserve the ambiguities of three-dimensional vision better.[16] But this must not blind us to the fact that *all* art is schematic.

It turns out, then, that the history of art does not disclose any uni-

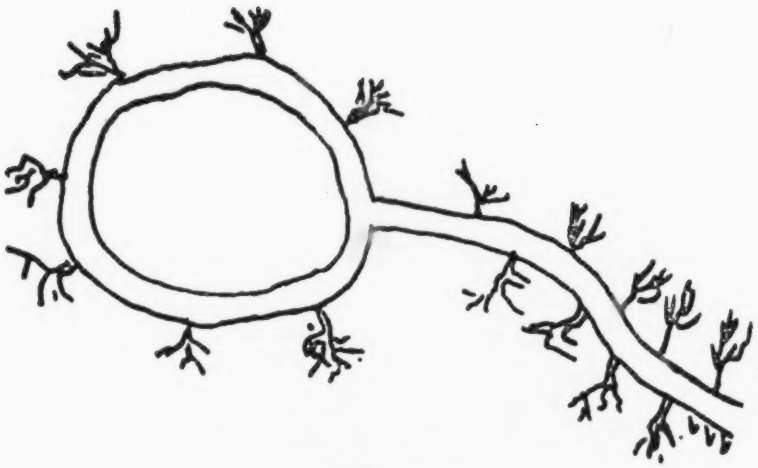


Fig. 5

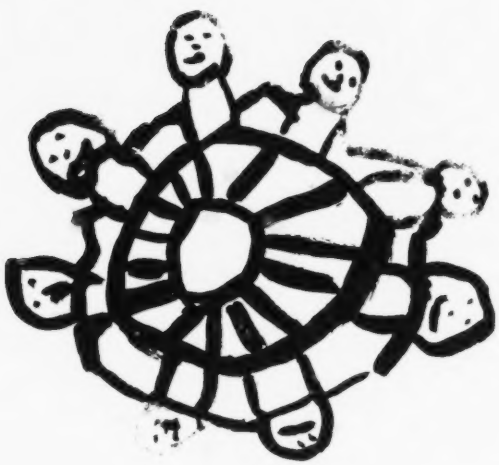


Fig. 6

form or objectively valid progress from primitive to sophisticated; we only observe change. History offers us no means of distinguishing between undeveloped and developed drawings. Both are schematic, and the most primitive adult form-maker, like the most primitive language speaker we know of, already makes forms which are structurally as complex and as subtly organized as ours. As far as our question about the origin of schemata is concerned, there is little future in the phylogenetic approach. And the characteristics of child art which are picked out as a result of the supposed parallel between onto- and phylo-genesis are fruitless also.

But there are features, characteristic of very young children's drawings, different from those we have discussed so far, which do disappear with maturity. These features give us the opportunity we want, to compare undeveloped and developed drawings, and hence to trace the origins of schematic systems.

In the earliest stage of the child's drawing, when his schemata are still undeveloped, we find the following distinctive features: [17]

1. The young child has incomplete sensory-motor co-ordination, which gives his early drawings a special scribbled kind of crudity.

2. Because of this incomplete sensory-motor adjustment, he finds it difficult to repeat what he has done exactly.

3. The forms he draws exhibit a remarkably low degree of differentiation.

II

Drawing is not a spontaneous activity. The child does not pick up a pencil of his own accord, and begin drawing. Rather he needs to be shown the pencil, shown that when held in such a way the pencil can be made to mark the paper. But once the child realizes that he is capable of marking the paper he is often so fascinated by this ability that he ends many scribbles by blacking out the entire page.[18]

Soon after the child's discovery that he can mark the paper, he begins to scribble. This usually begins at about one year. The scribbles that occur are of several specific kinds, roughly the same for all children, and their chronology is fairly constant (Figs. 7-10).[19] First the child does wavy scribbling—the result of swinging the forearm backwards and forwards. Secondly we find what is called circular scribbling—where the lines go round and round in circular spiralling movements. Variegated scribbling, where the wavy and circular forms are mixed, starts towards the second year. Finally, also about the second year, we find differentiated scribbling. That is, instead of the scribble being a single dense mass all over the paper, there are now various separate blocks of it.

About this time the child begins to draw single figures, lines, spirals, circles, and begins to name them. Thus, when the child is only about two years old he already has certain prototype schemata or formulae in his vocabulary. Although they are, in the end, developed to

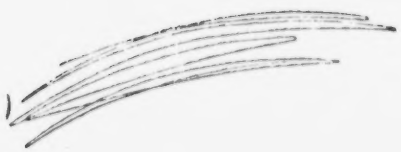


Fig. 7

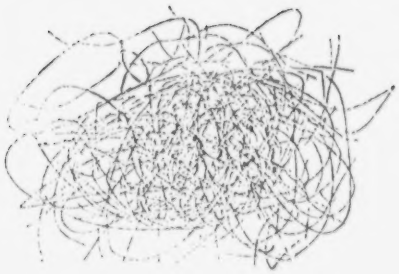


Fig. 8

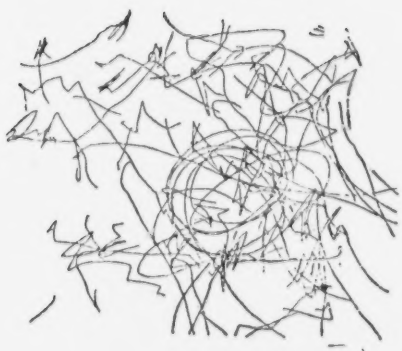


Fig. 9

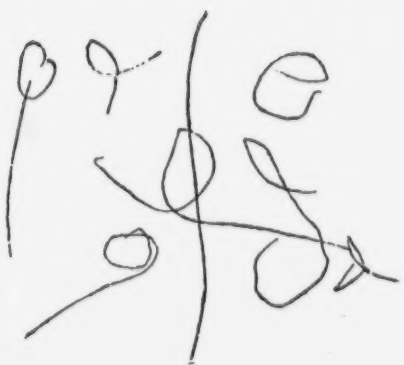


Fig. 10

the extent where he can invent new shapes, there is always a tremendous impulse to use the first and simplest formulae which he invented. Take the circle: we find prominent circular buttons, oversized round heads, and even the teeth of a saw are drawn as circles.

Somehow, at some stage, these endlessly repeated formulae have taken the place of the scribbles he began with. As Arnheim says rather fancifully: 'To see organized form emerge in the scribbles of children is to watch one of the miracles of nature. The observer cannot help being reminded of another process of creation, the shaping of cosmic whirls and spheres from amorphous matter in the universe.'[20] How shall we explain this miracle? How is it that the child progresses from being able to scribble only, to being able to make clear schematic images?

It might be argued first of all that these schemata are derived from life. That, in other words, as soon as the child learns to control his pencil (which he learns by scribbling) he then begins systematically to copy nature, to imitate the forms he sees in nature.[21] However, in view of the fact that all drawing is schematic, this theory is fundamentally untenable. If you draw a bird, not by copying a real bird but by making use of certain familiar schemata, then it obviously won't do, when we ask about the origin of the schemata, to say that their origin is in nature.[22] Such a circle of argument can explain nothing.

Secondly, it might be argued that if the child cannot derive his schemata from nature, we must assume that he derives them from other drawings that he sees. In other words, he learns whatever vocabulary of schematic forms he is exposed to. This seems very likely. At least part of it must be true, in fact, to account for the cultural continuity of schematic traditions which we call style. But there is again a tremendous difficulty. If an adult reads a how-to-draw-a-bird book, he can in fact copy the appropriate schemata he is shown, and make use of them to draw realistic birds. But a young child, quite apart from the fact that he does not copy nature, cannot copy other people's schemata either. Or rather, he cannot copy any schemata for which he does not already possess the specific sensory-motor control (Fig. 11). Here is a typical five-year-old child's attempt to copy a square and a rhombus. He can copy the properly orientated square, which he has drawn before, but he cannot copy the same square when it is in its unfamiliar diamond position.[23]

We are faced with the following problem. In the first years of his development the child is not copying his schemata from other children or adults, and he is not deriving them directly from the world. Somehow, then, we must explain the genesis of the first schemata in terms of the child's own activity. Consider the following three postulates.

1. The child frequently reproduces his own previously established motor acts.

2. These acts are modified during execution by random variation.

3. They are also modified by a highly systematic built-in process of levelling and sharpening.

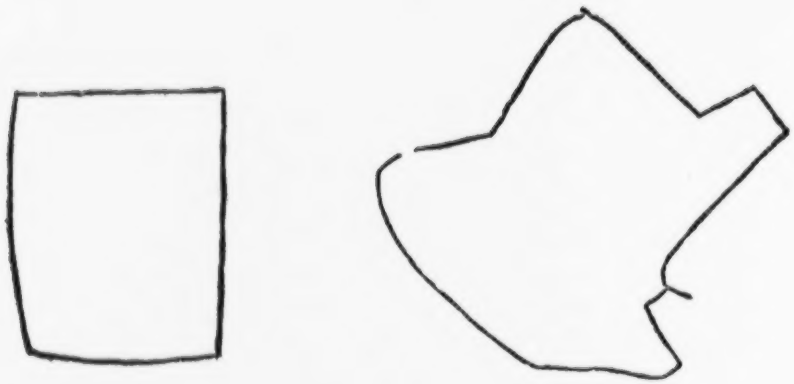


Fig. 11

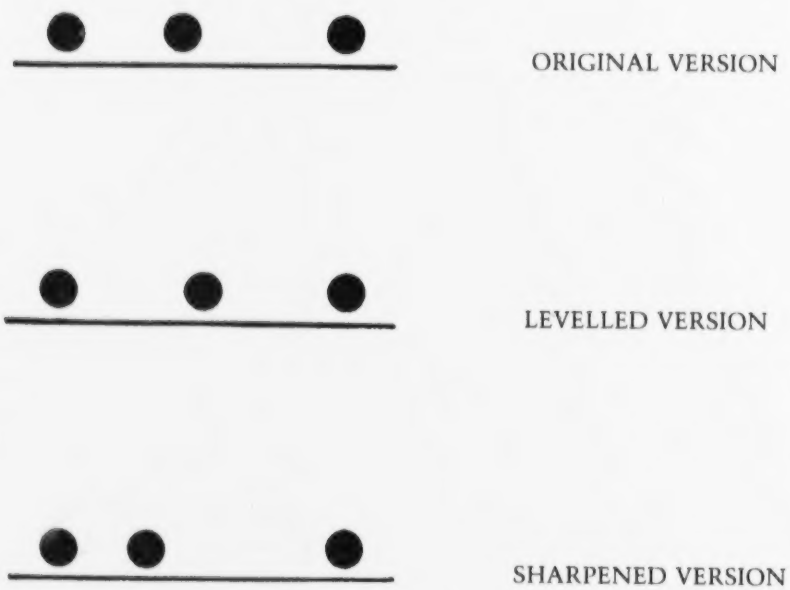


Fig. 12

1. We know that the child is capable of repeating a schema, once it has been established; for the pattern of motor activity which generates the schema can then simply be called into play. Britsch cites ample evidence for the fact that children do reproduce what they have done before, and do so as often as they get the opportunity.[24] There is enough pleasure to be had from the sheer motor side of the activity, apparently, to guarantee the repetition of the motor acts once they are established.

2. Random variation occurs in either of two ways. First of all, when the child repeats a scribble, it is never quite the same scribble as before. Just on account of the freedom of the activity, certain kinds of random variation are constantly introduced as errors. Secondly, the phenomenon often called automatism is also an instance of random variation. A movement is called automatized when, because it can be made more quickly and easily than other movements, it is sometimes repeated more often than is necessary. Thus, a boy who has learnt to draw legs in pairs as pairs of crossed lines, makes this figure twice under a horse's body; but sometimes forgets himself and does it three times and four, making an animal with six or eight legs.[25] Another boy does the same with fingers when he gets into the habit of drawing hands automatically.

3. Levelling and sharpening are two special kinds of assimilation. In a famous series of experiments which Wulf carried out in Koffka's laboratory, subjects were asked to reproduce simple forms from memory.[26] Wulf observed three kinds of distortion taking place. He called them levelling, sharpening and normalization. What he called normalization – the assimilation to previously developed schemata – is the most familiar of the three. But in a very young child, who has extremely limited experience, and who has, by postulate as far as we are concerned, no previously developed schemata, this kind of modification is the least important of the three effects.

What is more important for us is that in reproduction subjects suppress certain features of the forms, and accentuate others, supposedly in accordance with the Gestalt-coined law of *pragnanz* or goodness of structure. The suppression is called levelling, since it turns out that departures from regularity are suppressed and the figures thereby made simpler or 'more level.' The accentuation, called sharpening, strengthens these departures from regularity, or 'sharpens' the figure's complexity by making it more definite (Fig. 12).[27] Actually the difference between levelling and sharpening is something of a conceit. In both cases the effect of the activity is to make the figure concerned more easily readable, stronger. As we would put it today, there is a tendency to replace poorly formed figures by versions which are easier to encode perceptually. Or, in artists' language, the new figures have greater strength and greater graphic clarity than their weaker counterparts.

Wulf's experiments, which are memory experiments, do not make it entirely clear at which stage of cognition the distortion he observed actually occurs. As far as his results are concerned, it could be either in

Fig. 13

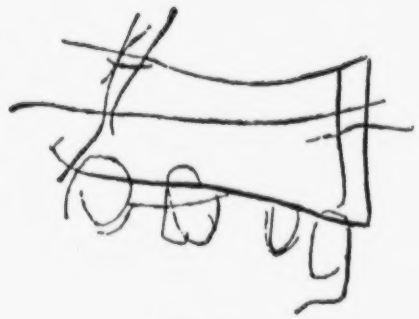


Fig. 14

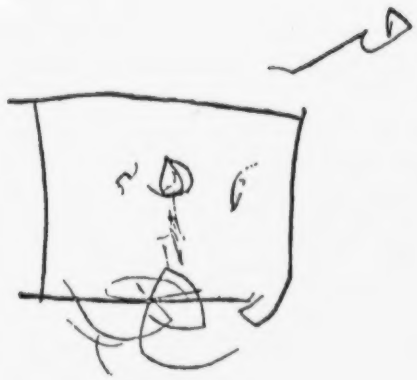


Fig. 15

Fig. 16

the process of perception, or while the forms are held in memory, or during the act of reproduction. It now seems likely that at least a good part of it belongs to the action of reproducing the form, rather than to the defective character of memory. Hanawalt showed that even after subjects have distorted figures when reproducing them, they will often still recognize the original as correct when shown it, which means that it is not the passive side of memory which obscures the detail, but the creative act of reproduction.[28]

Let me repeat the postulates:

(1) The child has a tendency to repeat its acts of drawing.

(2) In the act of reproduction there is a tendency for random variations to occur.

(3) The act of reproduction also tends to level and sharpen the forms which are drawn.

These three postulates seem reasonably well founded in observation. To see how they are enough to account for the genesis of schemata in a child's development, let us watch the birth of two schemata in the life of a little girl.

> THE RECTANGLE. (Figs. 13-16.) (Age 2½.)
> Here we see a series of drawings in which the child is trying to draw a tram. She begins by making patterns of blobs and scratches. Gradually, as you can see, the rectangular shape of the tram begins to dominate the drawing. In the last drawing the scribbles are minimal, and we are left with a pure rectangle. This is the first time the child has drawn a rectangle. The form now belongs to her vocabulary.[29]
>
> THE TRIANGLE. (Figs. 17-18.) (Age 5½.)
> Here it is not random variation which is responsible, but automatism. The child draws a 'lady.' But in her excitement she draws the body twice, the second body outside the first. Since the body lines still have to meet at the head, the outside lines are pulled together at the top to make a triangle. The child calls these outer lines a cape. The next day she draws all kinds of triangular things, a house, a hat and so on. She now has a triangle in her vocabulary of schemata.[30]

Now, you may say, this is all very well. We have here a highly simplified account of the origin of the schemata a child makes his drawings out of. Constant reproduction, random variation, and systematic levelling and sharpening do account for the transition from scribbling to coherent schemata. But I promised that this origin itself would account for the child's creative ability to organize material. What we have seen so far really only begs the question of organization. It was observed by the Gestalt psychologists that people tend to modify their schemata in such a way as to make better forms or Gestalten. That is what the levelling and sharpening I have described amount to. But this simply introduces the idea of organization into the explanation at an earlier stage, and still does not account for it. We still couldn't build a levelling and sharpening device, because it would still depend on knowing just what characterizes good forms—which is, after all, the

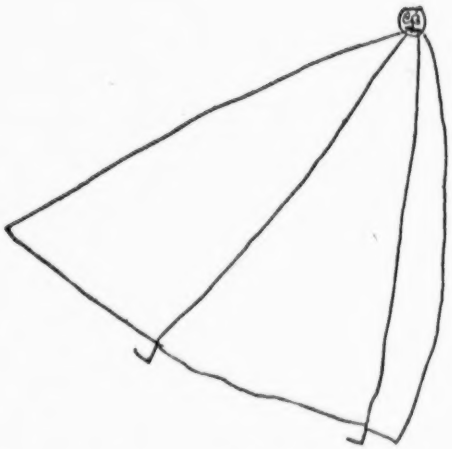


Fig. 17

Fig. 19

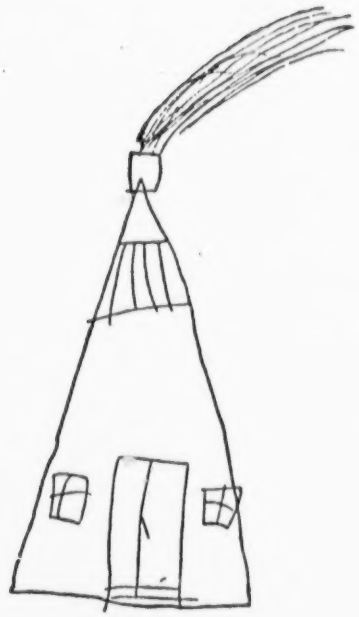


Fig. 18

very thing we really want to know when we ask questions about the development of creative ability.

But let us replace this interpretation by a rather simpler one. What, after all, does the process of levelling and sharpening achieve? It enables the child to make patterns which are as easy to distinguish from one another as possible. One scribble is very like another. But the line, the circle, and triangle, and rectangle, and the more complex 'good' forms, are easy to pick out, they are easy to identify. The child, even if not born with the push towards making strongly distinct forms, is directed towards it the moment he starts to give names to the forms he draws. It has been noted by many observers that children name the drawings they have done long before they are drawing anything which we should regard as recognizable images.[31] Even if we assume that the child applies names randomly to his first blobs of drawing, he will be brought to task very quickly because the drawings he calls 'flag' and 'mother' and 'flower' are indistinguishable to the people round him and he will be told as much. The ambiguity of such patterns forces him to sharpen them; that is, to replace them with patterns which are progressively more different from one another and from all other patterns. These patterns, as different as they can be from all other possible patterns, are just those which we call organized. And the process in which forms are distinguished from one another as strongly and powerfully as possible is, in my view, precisely the centre of what we mean by the creative power to make order.

To review this, let us take a very simple example. Think of all the possible arrangements of a deck of cards. The most clearly organized arrangement we can think of is the one where the cards are arranged in sequence, and in their four suits. I want to suggest that we call this 'organized' not because of its visible internal structure, but because it is especially different from the result of a typical shuffle. The forms we call organized are those which are as strongly distinguished as possible from all alternative configurations. It seems very likely that this is what we are talking about when we draw attention to the uniqueness of works of art. (In view of certain undesirable tendencies in contemporary painting, it is perhaps important to point out that this is quite different from praising a work because it is 'new and different.' For a painting to be new it need only be different from all known paintings – which is no guarantee whatever of good organization. For a drawing to be unique in the above sense, however, it must be unique in the domain of *all* possible alternatives. It is one of the central results of statistical thermodynamics and information theory that this kind of uniqueness or low entropy is the same as what we usually call order.[32]) What marks a great form as much as its own structure is the fact that it is very strongly distinguished from all possible alternatives. And this is exactly the effect that levelling and sharpening has. It makes forms more codable, easier to deal with cognitively, by distinguishing them more and more strongly from one another.[33]

This brings us to the central point of our discussion. It is often held that creative talent consists chiefly of the ability to synthesize, to bring disparate material together in satisfying relationships. This is a view which has its uses. But I wish to suggest that this is, in a way, a secondary and incidental aspect of creation.[34] It may be regarded as incidental literally, in the sense that it can happen regardless of the artist's intent. For an artist, even if he tries only to differentiate the form he works on from every other which is possible, will, as if by accident, happen to produce highly synthesized material, because this is the only kind of material that serves his purpose from the point of view of differentiation. It is true that what we call strongly integrated material has a clear enough structure to be powerfully different from all other material. But integration can happen whether the artist is paying deliberate attention to it or not.

Of course, we could say the opposite, too. We could call differentiation a by-product of integration. But then we face the question: Why should a child develop the power to integrate patterns? Unless we invoke some sort of germanic 'Will to Art,' the desire to integrate disparate elements, even if it seems to exist introspectively, is hard to explain. It is much easier to see why a child differentiates whole forms from one another. He does it as the result of a growing need to escape ambiguity. If we think of integration as a natural result of differentiation, and organization as a residual effect of the process which generates the child's vocabulary of schemata, then, when we ask how the child learns to create form, we do not need to concern ourselves directly with the puzzle of integrative ability at all. The source of creative talent can be fully understood in terms of the child's developing ability to force the forms apart from one another.

REFERENCES

[1] Piaget, Jean, *Play, Dreams and Imitation in Childhood*, Eng. trans. by C. Gattegno and F. N. Hodgson, New York, 1951. p. 112.

[2] Taken from Arnheim, Rudolf, *Art and Visual Perception*. Faber & Faber, 1956. p. 141.

[3] The most complete demonstration of this point has been given by Gombrich, E. H., in *Art and Illusion*. 1960, and in his earlier book, *The Story of Art*. 1959.

[4] Claparède, E., *Psychologie de l'enfant*. 9th edition, Geneva, 1922. p. 531.

[5] Lamprecht, K., 'Les dessins d'enfant comme source historique,' *Bulletin de l'Academie royale de Belgique* (classe des lettres, etc.), No. 9-10, 1906. pp. 457-69.

[6] Taken from Lindstrom, Miriam, *Children's Art*. 1957. p. 48.

[7] Taken from Boas, Franz, *Primitive Art*. Dover paper-back edition, 1955. p. 206.

[8] Taken from Schaefer-Simmern, Henry, *The Unfolding of Artistic Activity*. Berkeley, 1948. p. 40.

[9] Taken from Levinstein, Siegfried, *Das Zeichren der Kinder bix zum 14ª Lebensjohn*. Leipzig, 1905. Plate 59, No. 136.

[10] Taken from Gaitskell, Charles and Margaret, *Art Education in the Kindergarten*. Toronto, 1952. Plate 9.

[11] Loewy, Emanuel, *The Rendering of Nature in Early Greek Art*, trans. John Fothergill, 1907. A number of these theories are discussed by Gombrich in *Art and Illusion*. pp. 22-5.

[12] Levy-Bruhl, L., *How Natives Think*, trans. Lilian A. Clare, New York, 1925. p. 119.
[13] Bühler, K., *Die geistige Entwicklung des Kindes*, Jena, 1918. pp. 157-8.
[14] Gombrich makes this point repeatedly: *op. cit.*, pp. 146-78, where he gives many examples of schemata used by adult artists even in the most 'realistic' drawings.
[15] *ibid.*, pp. 174-5.
[16] *ibid.*, pp. 275-8.
[17] Arnheim, *op. cit.*, pp. 135-45, and Helga Eng, *The Psychology of Children's Drawings*, 1931, throughout.
[18] Lindstrom, Miriam, *op. cit.*, p. 9.
[19] Eng, *op. cit.*, pp. 101-6.
[20] Arnheim, *op. cit.*, p. 136.
[21] It seems doubtful that this really goes on at any age. However, for a discussion of the view, see Piaget, *op. cit.*, pp. 62-88.
[22] See Gombrich, *op. cit.*, p. 147.
[23] Eng, *op. cit.*, p. 126.
[24] Britsch, Gustaf, *Theorie der bildenden Kunst*, Munich, 1926.
[25] Eng, *op. cit.*, pp. 139-40.
[26] Wulf, F., 'Über die Veränderung von Vorstellungen (Gedachnnis und Gestalt),' reprinted as 'Tendencies in Figural Variation' in Ellis, W. D., *A Source Book of Gestalt Psychology*, 1938. pp. 136-48.
[27] Wulf, *op. cit.*, p. 147.
[28] Hanawalt, N. G., 'Memory trace for figures in recall and recognition,' *Archives of Psychology*, New York, 1937. Vol. 31, No. 216.
[29] The sequence of drawings for this example and the next are taken from Eng, *op. cit.*, pp. 28-32. Since I did not actually see the drawings being done, the interpretation, which is mine, may be at fault.
[30] *ibid.*, pp. 61-2.
[31] Vigotsky, L. S., *Speech and Thought*, first published in Russia, 1934. About to appear in translation. Ch. 2, Sec. 11. Also Eng, *op. cit.*, pp. 5, 10.
[32] See any standard textbook on thermodynamics or information theory. A discussion that is easy to read is to be found in Wiener, N., *Cybernetics*, New York, 1948. p. 70.
[33] Wulf, *op. cit.*, p. 147.
[34] For a recent summary of related points of view, see Campbell, Donald T., 'Blind variation and selective retention in creative thought, as in other knowledge processes,' *Psychological Review*, 1960. Vol. 67, No. 6, pp. 380-400.

Christopher Alexander is professor of architecture at the University of California and director of the Center for Environmental Structure, Berkeley. He was born in Vienna, Austria, in 1936. He lived in England in his youth, attending Cambridge University, which awarded him the M.A. in Mathematics in 1956. He returned to Cambridge to study architecture, completing his B.A. in architecture in 1958, and in 1963 he received a Ph.D. in architecture from Harvard. Dr. Alexander is the author of *Notes on the Synthesis of Form*, and co-author of *Community and Privacy*, *A Pattern Language Which Generates Multi-Service Centers*, and *Houses Generated by Patterns*, and he has written numerous articles and papers. In 1965 he received the Kaufman International Design Award. The essay which follows was originally written in response to an invitation to address Jerome Bruner's class at Harvard. Subsequently, it was published in the *British Journal of Aesthetics* and is reprinted with their permission.

THE ROLE OF THE PARENT

POLLY McVICKAR

The young child is by nature full of curiosity. He explores and discovers. His vision is fresh, and his actions spontaneous. He knows the world through his eyes, ears, nose, mouth, and skin. He learns through his senses. The parents' task is to provide experiences that nourish him. Polly McVickar offers many examples of such experiences.

The joy of an experience is sufficient justification for it. But joy is not the only consequence of art experiences. Mrs. McVickar believes that the power to bring something into existence—to create—gives child a sense of self. Allowing a child to experiment in a climate of security helps him to become a strong and autonomous person.

Mrs. McVickar urges parents to try to understand their child's art work, but to respect his desire for privacy, his reluctance or inability to share his experience. Young children do not begin their work with a clear intent, pursuing it single mindedly to its completion. Their art work may be more like film, in which images succeed one another over a period of time, each new image obliterating the old. Asking a child for a title, Mrs. McVickar says, is meaningless. It is far better to respond to the child's work by talking about the color and shapes.

Mrs. McVickar gives attention to enjoying the arts, as well as to making. She views the arts as sharing consisting of rhythm, form, color, and the like. Surrounding the child with the arts in their many forms enables him to make his own explorations and discoveries. The young child's pleasure in sharing the arts with his parents can be the foundation for a lifetime of artistic vision.

We all begin our lives with a sensory capacity to know the world. Isaac Asimov says, "In the beginning was curiosity." We have a readiness to receive and the drive to explore: to taste, touch, see, smell, and hear. This is how we know our world, and know it in many ways.

Bring a rough shell from the beach, and the youngest child already knows how to become acquainted with it. Taste it and find the saltiness; run fingers over the ridges; bang it against the crib side rhythmically—it has a good sound; there are colors, too, and the shape is pleasant to feel. You, a child, begin to assemble and make your own kind of knowing. No one tells you this. You find it yourself.

Paul Valery once said, "Look at everything as though you have never seen it before." This is what children do spontaneously, but we have almost forgotten that free, spontaneous time. We become, as the poet John Hall Wheelock says, "mossed over with living." But with children, parents can make a return to that fresh time of finding out.

And as they remember the sharp, simple joy of discovery, they draw out insights to help them meet the creativeness of children.

Wilferd Peterson has written,

> *You light up your imagination by stoking the mental fires through the senses . . . eyes, ears, nose, muscles, skin. You spur your imagination by giving it abundant data with which to work.*

So the role of a parent is first of all to extend the sensory experience of young children in every direction. Hang some balls of yarn in a doorway where the moving air makes them change with the shadows of the room. Or hang a prism through which the light rays dance; or streamers of paper that move and intertwine with their colors.

Bring a basket of stones, small and big, rough and smooth. Look closely to see the colors and discover a small glistening speck. Test with your tongue the good roughness, stroke the smooth rounded part, feel its weight in each hand. These are earth things, not a manufactured game, but real things of the earth. Find pieces of wood from the scrap heap of a cabinet maker. Smell the special quality of pine or cedar; look closely at the grain; and feel the small ridges.

Take children out at night, even the youngest. Everything sounds different, the lights make a magic time; the reflections move and change. The air feels different; you can almost feel the world turn. The tree you know so well in sunlight is full of shadows and shapes.

Bring in a clump of grass, ordinary grass. Yes, it is green, but you can look more closely than that. There is a streak of tan, a little yellow, a line of dark green; and too, there is a place that looks blue, and even a little purple. Smell the aroma of earth at its base, feel the tiny roughness of edges of the blade. Here we are giving children a way of knowing. We are saying, "Never be satisfied with just a surface impression." Smell and look, feel and see. This is the way to know the world, and this is the base for art.

We are conveying an attitude, one that involves action. We cannot *tell* this to children; we must ourselves demonstrate it. We, too, must take a voyage of discovery and find sensory pleasures. The role of a parent is to show, and take part also, finding surprising qualities in everything.

Paul Klee wrote, "For the artist, communication with nature remains the most essential condition." As a mature artist, he is referring to this sensory extension of the human being into the world, being open to receive impressions of shape and color.

The ways are endless, and once there is recognition of how significant sensory experience is, the directions are many. One can bring home a knobby branch, stand it in a jar, and tack an orange piece of cloth or paper behind it to enhance its shapes. Bring in a piece of paving block with lines that look like a crouching cat. Bring a pocket full of leaves, shiny on one side, like fine suede on the other, rich with subtle

browns and green and gold, and place them in a vessel for the family to feel and smell. Trace the delicate lines of veins extending from the center. Watch as the leaves begin to dry and curl like fingers.

Have a place where even the youngest brings something he has found and liked, a shelf, a box, a table. It is a place for the whole family. It has been said that one of the earliest creative acts is choosing a color or a shape that you especially like. Each member of a family can affirm his own creative view of the world.

There must also be a place for each individual that is private. Some things a child finds must be for himself alone—perhaps to be shared later. A family can respect this, too, and a box or a drawer or some other hidden place is private property. No reason is needed. Simply, the place and its objects have special meaning for a child, his own kind of meaning. This is how the creative, artistic person begins to get the feel of himself.

When a child knows that he can count on parents to stand up for him no matter how strange his choices may seem, no matter what things he makes, or how unnecessary a need may appear to be, he feels the climate of ease in which he can say and make and choose.

There are other aspects of a parent's role. There should be an interest in all the arts, and encouragement to enjoy them. There are excellent art books available in the public libraries to be taken home and browsed through.

A book of sculpture by Giacometti, or the work of Henry Moore, or African art can say to a child there are many ways of art. Books about the paintings of Paul Klee, Kandinsky, Nolde, and Chagall reveal art that is rich in colors and shapes, rhythm and form. Children go back to them again and again because there is so much to see.

Reading aloud in a family can give a child a sense of the rhythm and flow of language. Begin with the nursery rhymes; their melody and magic are a rich heritage for all children, who listen and often join in with the dancing rhymes. Poetry is exciting for its interweaving of language color and tone, and for its imagery. Stevenson's "The moon has a face like the clock in the hall," or James Reeves' "The sea is an angry dog," or e. e. cummings' "a new moon thinner than a watch spring" move a child to draw on his remembered experiences and his own images are stirred.

Music, too, has forms and shapes as rich as the shapes that emerge from clay. When parents introduce children to a variety of music: Stravinsky, the Beatles, Bach, Donovan, African drum music with its deep rhythm, and Indonesian music with the special color of its gongs, they provide children with a deepened experience. Children enjoy painting while music is being played, as they feel the connection between the rhythm of sounds and the rhythm of colors, both close to the dance.

When parents demonstrate by their own interest, their openness to all the arts, their attitude will not be forgotten. There should be no

fences around anything, but rather a readiness to hear new music even if it seems strange and uncomfortable, a readiness to see and become acquainted with reproductions of paintings, even though they may seem strange and distorted.

Fortunately, art reproductions available today are excellent, and for little cost parents can maintain a changing art display in the home. The child who rebels at a De Kooning, will probably be the one who first notices when it is taken down, and will ask with great concern, "Where is it?"

Readiness means more than just receiving; it means giving yourself a chance to find out what is there. You have to give in order to understand and it takes time. A child who learns this will be receptive to the arts.

Children are spontaneous "makers." From the earliest age, they combine materials to make a thing of their own. Pour water in the sand, and it is possible to mold it into many shapes. Hammer nails in a board, wind yarn in and around them, and an intricate design emerges. Two sticks banging an iron pipe make rhythms and tones in a changing pattern.

Whatever comes to hand can serve, and the discovery that a person can make almost anything, is a growing awareness and an affirmation of the individual. When parents keep a supply of materials on hand, children turn to them again and again. Just knowing they are there is, itself, an incentive.

What materials? All kinds of scrap things, such as paper, cardboard, and wood, supplies such as wire, string, and tape, scissors and glue. Especially water paint of all colors, and different sized brushes; oil pastel colors that are inexpensive and have rich colors; some moist pottery clay kept ready in a plastic container so it will not dry out. Almost anything and everything will be put to use. A child, looking over the supplies finds that materials themselves suggest possibilities, and the "making" will be original, imaginative, and beautiful.

Storing supplies takes space, and it is not easy, but cardboard cartons are helpful, and perhaps a shelf or a cupboard can be donated for the purpose. The parent who values "making" will be willing to have some inconvenience and perhaps a little messiness in the process. It is the long-range view that matters.

It takes space, too, for working. A table, even a wide board on boxes, will be excellent, as long as there is room enough to manipulate the materials. When children have the encouragement of space and things to work with, they will explore what materials will do and will bring together experiences, ideas, feelings, remembrances, and images to make things that are deeply their own.

Miriam Lindstrom writes of the art experiences of young children,

> *. . . as narrator and audience of one, a child can take out of himself and place in the external world for himself to see . . .*

the meaning of a situation experienced and remembered or imagined.

Most often what a child shows to us seems incomprehensible, and we should not try to ferret out meanings. Children have a kind of shorthand, and a dancing motion of color, a line, a shape will represent the whole remembrance. And this is why a parent can not ask, "What is it?" The painting is usually a flow of images starting with one image and from this another is suggested, and another and another, and so it goes. The child does not start out to make a "picture" of something as an adult considers the term. The painting is more like a dance that is invented and changed as it goes along.

A child who feels adults want an explanation can always give a title for his work, but this has no meaning. The child could not possibly begin to tell all of the parts that went into his "process" of painting, even if he wanted to. Art is private. It does not belong to the parent or teacher. It is the child's own thing. It has utter meaning for the maker, and we have no right to probe.

A parent must respect this privacy and ask the child if this painting or drawing may be tacked up on the wall and displayed. His answer may be no, if the art object has a special private meaning for him. It is an unforgivable act for a parent to display a child's work before he has finished it or to add a line or color for him. It is the child's, and we have no right to interrupt his process—even if he ends up by painting brown over the whole thing, which he may do to keep it private.

Sometimes a parent is not sure what to look for and how to respond to children's art. First he must have respect for whatever a child has done. Always there is something one can comment on positively, although much of a picture may seem a puzzle. One can say "I like that color" or "Those shapes are nice together." Most often a child is not making a copy of anything; he is spontaneously making something that includes many of his impressions and feelings.

Children do spontaneously what Jean Dubuffet describes in his own way of working:

> *It seems to me that to apply oneself to cataloguing faithfully the real measurements of things is a wholly valueless operation. What strikes me as interesting is to restore in representation of an object the whole complex system of impressions that we receive in the normal situations of ordinary life, the manner in which it strikes your affectivity and the forms it assumes in our memory, and it is to this that I have always applied myself.*

The child who paints a house with wings may be saying how he feels about his house. He may be saying that for him the pleasant feeling of being in his house is as though he were being transported through the air, as though he feels lifted up above everything of the day. But we can't actually make this assumption, though chances are that it is so.

Yet it could be possible that during the process of painting, it simply seemed like a good idea to place wings on the side of the house just for the reason that they looked good.

Another child, painting a picture of people running through the air was probably using the most graphic way he could imagine to express speed. People run fast on the ground, yes, but he is using an image to show *how* they are going, as fast as you can go, through air, as fast as birds.

A child painting a tree walking may be so at home with art that he begins with a highly imaginative idea. He feels and thinks how it would be if a tree walked, leaning down with branches like arms to touch the children underneath. This imagination runs free. He finds surprising relationships, is not afraid to try new ways, and is not concerned with making a "copy."

Children possess a fresh, ready, nonconformity. It is sad that this so often gets discouraged. Ben Shahn once wrote, ". . . non-conformity is the pre-condition of art and the pre-condition of thinking." It is the voice of the individual that is affirmed through art, and parents have the opportunity to strengthen it.

One of the most important ways to show children that experiences in art are significant is for parents also to explore the possibilities of art materials. The Museum of Modern Art in New York City has initiated a program by which all members of a family can participate together in the creation of art forms and can thus learn to rephrase, resay, and understand more deeply the impressions and feelings of living.

Jerome Bruner has said of art:

> *. . . it is not an embellishment, not a substitute . . . it is a unique method of discourse, giving access to areas of knowledge that are closed to other types of discourse.*

As children become acquainted with materials, other kinds of awareness begin to develop. Each tool can evoke a different feeling: a broad sweep of the brush gives a steady firm feeling, and a small brush can create a sort of airy dance of line and color. There is a close connection between self and the materials of art, and this is heightened through experience. When there are opportunities for young children to discover the world, through art experience, the groundwork for later art is laid.

Children learn to find art in many unexpected ways. Almost any starting point will lead there. If you have a basket of rocks, you can explore them, see colors in them, and find shapes. You can paint a rock; you can chip it to change its shape; you can imprint clay with it; or you can make a print from it on rough paper. Clap two of them together and you have a beat for music; rattle several together and you have a musical instrument with many tones. Glue some together to make a small sculpture. Feel the weight on your hands; is one rock lighter than the other?

When they are close it is hard to tell. Challenge yourself to com-

pare them, and then test your decision on the scales.

Art is important in the life of individuals and in the life of society. John F. Kennedy once wrote:

> *The life of the arts, far from being an interruption, is very close to the center of a nation's purpose and is a test of the quality of a nation's civilization.*

The role of parents is a significant one: to encourage and strengthen vision and imagination and to encourage expression in all the arts, so that children will always keep these ways alive.

REFERENCES

Bruner, Jerome, *On Knowing: Essays for the Left Hand*, Cambridge, Mass.: Harvard University Press, 1963.

D'Amico, Victor, *Art for the Family*, New York: Museum of Modern Art, N.Y., 1954.

Klee, Paul, *Pedagogical Sketchbook*, New York: Praeger Publishers, 1953.

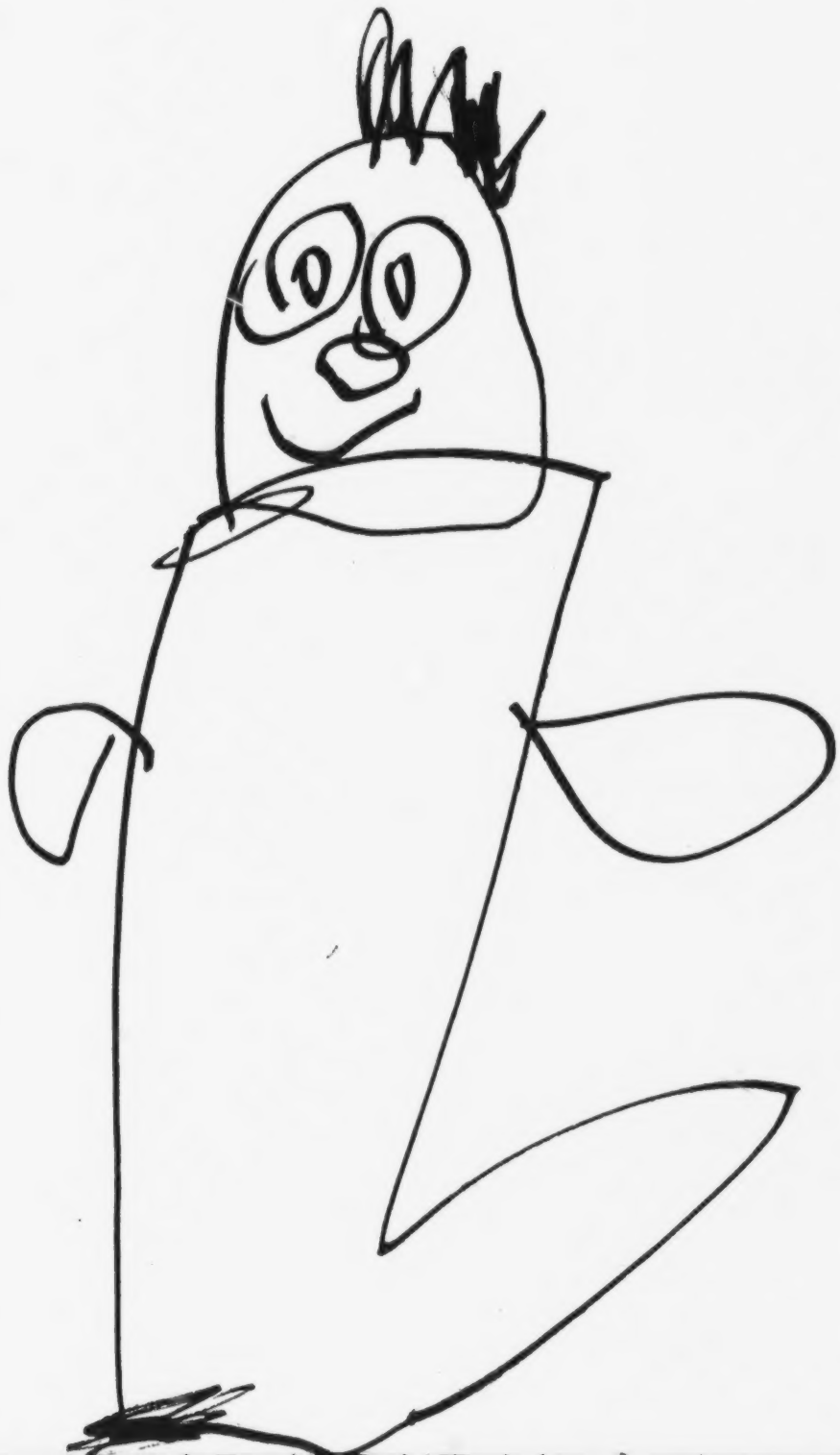
Lindstrom, Miriam, *Children's Art*, Berkeley: University of California Press, 1954.

Peterson, Wilferd, *The New Book of the Art of Living*, New York: Simon and Schuster, N.Y., 1961.

Ragon, Michel, *Dubuffet*, New York: Grove Press, 1959.

Shahn, Ben, *The Shape of Content*, Cambridge, Mass.: Harvard University Press, 1958.

Mrs. Polly McVickar teaches art, music, and language arts at Pacific Oaks College in Pasadena, California. She also has classes at the University of California Extension in language arts, poetry, folk tales, and story telling. She has taught summer classes at the Eliot Pearson Department of Child Study, Tufts University, and has been a lecturer at Valley State College, California; Lesley College, in Boston; Brandeis University in Waltham, Massachusetts; and Vanderbilt University in Nashville, Tennessee. Mrs. McVickar received her A.B. from Wheaton College and her M.Ed. from Boston University, and also studied art with Adelaide Fogg. Mrs. McVickar is active in professional organizations concerned with young children. She is president of the California Association of Parent Participation Schools and a Board member of the International Association of Parent Participation Schools, and has also served on the Board of the National Association for the Education of Young Children. Mrs. McVickar is the author of *Storytelling in Java* and is writing a book titled *Children and Poetry*. Her articles and pamphlets include *Creative Process in Young Children* and *Educational Responsibility of Cooperative Nursery Schools*. She is also a painter and printmaker whose works have been exhibited in one-man and group shows.



THE ROLE OF THE TEACHER

LOIS LORD

Lois Lord addresses herself to the questions that concern practitioners of early childhood education. In a brief but comprehensive presentation she offers practical suggestions for teachers. She deals with the recurring concerns, such as: arranging an environment that helps a child to feel free and secure; selecting, presenting, and preserving materials; offering motivation, guidance, and rewards; teaching skills; understanding child art; recognizing growth; and evaluating the program.

The practices Miss Lord recommends implement a philosophy of early childhood education to which most teachers adhere. Emphasis is on the overall growth of the child. Activities are mostly unstructured and natural. The primary value of art activity is seen to lie in the experience itself, but it also contributes to cognitive, emotional, motor, and social growth. The art product provides a record of the child's achievement and as such is of lasting interest to teachers and parents. The child's interest in it is fleeting.

The idea of the teacher is to set the stage, offer encouragement, and guide development. Children are encouraged to experiment, discover, and solve problems. The teacher, however, is constantly aware of what is happening and ready to intervene when children need help.

There are no absolute rules for making a good painting or sculpture, and there are no absolute rules for becoming a good teacher. Teaching is an art. The following suggestions are guidelines to help the teacher develop sensitivity and ways of encouraging children in the adventure of creative growth. Once a teacher is on the right track she can learn each day from what she does right and from where she fails. A teacher must have courage and enthusiasm. She will learn from watching children as they work, listening to them, and studying their work.

The Value of Art for Children

The teacher plays a significant role in helping young children become aware of the meaning and value of their art experiences. She sets the stage, provides materials, and gives guidance and support which promote growth for each child in her group. A teacher must understand the art of young children and be able to see the value of working with art materials. If a teacher takes art seriously and understands its values, she can reinforce each discovery as it takes place, so that the child continues to learn and grow. The teacher must look at art experiences as having intrinsic value, but she must also understand that they develop readiness for school learning. Art experiences foster independence and

the ability to make decisions, for in art the alternate solutions are infinite and a child must make all the decisions himself.

Creating the Atmosphere

By her actions and by her commitment to art experiences for children, a teacher can make the atmosphere in her classroom one that generates involvement. One way a teacher communicates her attitudes and her concern for children and their learning is by the physical arrangement of the room. This is of paramount importance in developing a sound attitude toward work. Certain arrangements invite a child entering the room to participate. Many discipline problems have been alleviated by changing the room arrangement. A teacher can arrange areas for children to work either in groups or alone. Low tables should be placed near supplies: painting tables near the extra supply of paint and paper, work benches convenient for tools and wood, and a washable table near the clay. Every morning, when the children come in, the room should be ready, materials available. Young children gain security from constancy in their environment; if for any good reason during the year the teacher decides that the arrangement should be changed, she should take the children into her confidence so that they feel they have participated in that change. The teacher is responsible for keeping the room in good order. If there is an accident, such as paint spilled or a block building knocked over, the teacher with the help of children must restore order as soon as possible.

While easels are convenient for painting, children should also have the opportunity to paint on level surfaces, which they usually prefer, given the choice. Painting on a low table gives a child opportunity for free movement and greater control of the medium. Sometimes an area on the floor can be used for painting, but care must be taken that the area is protected from traffic. Those places set aside for children to work alone should be in the most quiet parts of the room. A good teacher has a way of counteracting distraction so that a child involved in working alone can feel secure in giving his complete attention to his work.

In addition to the physical set-up, the teacher's concern for what the children do is of utmost importance. She must have respect for child art and genuine interest in the way each child develops. The teacher must be fully involved, supporting but not interfering with the child as he works. Each child must sense that he has the teacher's interest and support. Teaching in art, as in other areas, consists of working with a group but making each child feel he has the teacher's special attention. This attribute of the excellent teacher is an important factor in making the classroom a happy working environment for children.

A teacher who is visually sensitive selects with care each thing she displays in her classroom. Children see so much that is poor in quality that it is important to expose them to objects that do have quality, and to reproductions of fine paintings and other works of art.

Paintings most suitable for children are often those in which the emphasis is less on realism than on imagination and color. For example, children enjoy paintings by Matisse, Klee, Chagall, and many contemporary painters. In using visual materials for reading-readiness and academic areas, teachers should try to select those which are devoid of stereotyped drawing. Photographs are valuable visual resources as well. "Cute" drawings done by teachers or other adults should be avoided, because children may want to copy them instead of developing their own images. Everything displayed in the classroom should have quality.

The major part of display areas should be used to show the work of children. When three-year-olds create a work of art, they are usually concerned only with living an experience, not with producing an art object. Often they do not remember which painting belongs to them. To display their work may not be important to them, but it is worthwhile for other teachers and parents to see the young child's painting. The teacher must make sure that at some time each child has a piece of work displayed. By four years of age, most children are concerned with what they are making as well as with living an experience. They become aware that on some days they move forward and are more successful than on others. It is important that the teacher display their best efforts. Paintings on display should be changed frequently in order to emphasize the doing and the growth taking place. Three-dimensional work is more difficult to display, but a shelf can often be put up for that purpose, and care can be taken that each child gets a turn to have his piece displayed. Children's work around a room reveals that the room belongs to the children and that art activity thrives there.

Providing Materials

A teacher who provides appropriate materials in good condition for a child is similar to a mother who provides delicious food for her growing family.

The teacher of young children must have knowledge of a range of art materials which are suitable for the age group she teaches. She should know from firsthand experiences the possibilities inherent in each one. Further, she must learn, as much as possible, to like each material, for a teacher's attitudes are so easily communicated to children. For example, a young nursery school teacher participating in an arts workshop stated that her pupils never worked with clay because they did not like it. The instructor discovered that the teacher herself was repelled by clay, and that she had never worked in it. After several sessions with clay, the young teacher's attitude changed and she introduced the material with great success in her classroom. Teachers who do not have the opportunity to attend an art class or a workshop can easily explore an unfamiliar material to experience its properties. Then as she watches the explorations of children she may see further possibilities for them to explore. A teacher's genuine enjoyment of material is an inspiration to her pupils.

Materials must be kept in perfect condition. For example, poster paint should be thick and smooth, about the consistency of heavy cream. Clay should be moist enough for small hands to model but not so wet as to be sticky. If clay is kept in plastic garbage cans with damp cloths and plastic on top it will keep well, and if it has become dry, small amounts of water may be added. Clay bins should be checked every day to be sure they are moist.

At the beginning of the year the teacher should take time to organize the storage of materials so that it will be easy for her and for the children to find what they need. There should be reserve storage, perhaps on high shelves, or in a closet. Each teacher will find her own way of organizing this reserve of supplies and tools.

The teacher should also arrange adequate materials for daily use. These should be on low shelves or tables. At times the teacher may set out materials for group activities. In addition, materials with which the children are familiar must be made available so that a child who wants to work with clay, or perhaps collage, or paint, can get his materials easily and work independently. A teacher who knows her group will know how much of each material should be available each day.

All working areas should be comfortable and conveniently arranged. Poster paint can be put in glass or plastic furniture coasters placed on an aluminum cookie tray with a plastic dish for water and a sponge for wiping the brushes. The child can thus be encouraged to mix colors, as the large tray gives maximum opportunity for discovery while he is mixing. An extra supply of filled coasters or paint jars should be provided from which children can replenish their supply.

In collecting materials for collage, the teacher must search for a variety of textures and patterns. A word of caution about patterns: Fabrics and papers which have large or pictorial patterns, as for example birds, flowers, houses, and so forth, are not suitable because the drawing is adult and far from a child's mode of representation. A child might be tempted to cut these images out and thus decrease his self-confidence in making his own images. However, small all-over patterns are suitable because he can use such materials as a patterned area in his own work. Teachers should keep a reserve supply in storage. Many teachers find it convenient to keep the materials in labeled cartons. For daily individual use, plastic shoe boxes on a low shelf can be used for storage and can include scissors and paste, and cardboard or colored paper for backgrounds. For young children, collage materials should be cut in very simple shapes, since inexpensive kindergarten scissors will not cut many fabrics. Shapes should not be contrived "free form" shapes which suggest adult work but simple shapes in a variety of proportions. In addition to textured and patterned materials, colored paper should be available for cutting and pasting.

Painting can also present problems, though solutions are easily found. If there is no suitable table, a small area can be set aside on the floor. If newspapers are spread out near a wall, and paper and trays are

placed on the newspaper, children can work happily and well. Putting the trays and paper against the wall prevents many accidents. Children will enjoy using the newspapers as a table not to be stepped on. A good teacher is always able to improvise to make the best possible working conditions for children.

A respect for tools can give children a sense of growing up with responsibility. This can be achieved indirectly by delegating specific tasks. Washing the brushes and cleaning paint pans provides an opportunity for washing, which the young enjoy, and for learning how brushes and paints should be cared for. Similarly, young children can often help the teacher set up materials for art activities. Tools should be used in an appropriate manner by even the youngest child. For example, if a child takes up a pair of scissors to cut clay, the teacher can give him instead a piece of wire or a tongue depressor. Her tone of voice can reflect a learning situation rather than rebuke. She might later explain to the children how wet clay would rust the scissors, and as proof leave a small piece of clay on a piece of tin overnight. Similarly, hammers, saws, and other tools should be used only for their own purposes. This attitude will help a child to respect his own experimental activities and should in no way prevent him from developing ingenuity.

Accidents are far less likely if the quality of tools is good. It is possible to buy really good steel scissors with blunt ends. In one school the teacher bought a few pairs a year until she had twelve. It was one child's job to count the good scissors each time they were used—and they lasted many years. With good scissors young children can cut fabrics and all sorts of materials.

Teachers in schools which have a very small budget will have to use a great deal of ingenuity in improvising. Such a teacher should use her budget for paints and the essential tools. Many materials can be obtained without charge. The classified section of the newspaper is good to paint on. Collage materials can be collected from parents, stores, friends, and children. If the school is in a rural area, perhaps clay can be dug and conditioned. A group of parents might be willing to help in this. Whatever the situation, the teacher who provides a variety of materials shows the children she cares about their art activities.

The way a teacher sets out materials may suggest ways of working that are either restrictive or open to choice. A teacher must constantly be careful to avoid offering a material to children in a manner which presupposes only one way of working. For years, in teaching three-year-olds, an experienced teacher presented clay in perfect condition, but in small balls on small individual boards. She discontinued the use of the boards after observing that many children made long rolls of clay end-on-end, often continuing the whole length of the table. Then one day Jonathan, small, eager, and energetic, rushed to the clay table, and purposefully taking all the lumps that the teacher had put out for ten children, he pushed each lump, changing its shape, and piled them up to make a huge structure. This was the way Jonathan liked to work, al-

though formerly he had used only the one lump offered by the teacher. Meanwhile the teacher got out more clay, and Kathy, working beside him, took a small lump and made a tiny delicate piece. Henceforth this teacher set out plenty of clay in irregular pieces, large and small, so that each child could work and develop in the way most individual for him.

Understanding Children's Art

Teachers must not only respect children and their art but also learn to understand how children grow in artistic expression. Understanding may be gained by watching children while they work, listening to what they say, and studying their work. By studying at one time several series of paintings by various children, a teacher can often see what is unique to each child and how each one has grown. Her increased understanding will help in finding ways to support each child's growth.

A teacher must not project her own images on a child's work but must respect his purpose. Joe, four years old, made a painting rich in color – blues and greys at the top and many greens at the bottom. It looked like a landscape to adults, but Joe said, "I have made this picture about the colors I like to mix." To say "landscape" to Joe would be to underrate his purpose and the real quality of his painting. Similarly, long clay coils of three year olds should not be called snakes because the child may call them something else, or may have made them simply for the joy it brought him. "What is it?" is a question to be avoided by adults. It is as valid to have experimented or made a design as to have painted or modeled a subject. Interest can more appropriately be shown by the expression in an adult's face or by saying, "Would you like to tell me anything about it?"

It helps the teacher to know that there are stages through which a child goes as he develops the ability to create with materials. These are not rigid categories but a sequence of development. Children work within a stage of development for varying lengths of time, and it is important that each child stay within a stage as long as it is satsifying for him.

No matter what the age of a child, as he starts to work with a material, he must initially explore it. Three-year-olds are almost exclusively involved in this exploration. It is the experience that is important for them, not the product. In making a painting, a three-year-old lives through many experiences as he paints one color on top of another or tries many ways of using the brush. In making a collage he may completely cover one arrangement with another. One three-year-old said, "There is another one underneath only you can't see it." In manipulating clay a child will first squeeze and pull apart the clay, pat it down, and then perhaps start over again. Even in this manipulative process each child works differently.

As a child gains control over a material, he starts to create order in his own way. In painting one child may make stripes, another shapes of various colors, and another may blend contrasting colors. Some young

children repeat the same thing for many days. David made almost fifty similar little shapes of clay, and Mary painted many striped paintings. This gave them security in the knowledge of their own achievement. As a child becomes secure in the feeling that he can make the material do what he wants, he will explore many possibilities of arrangements in making designs in paint, collage, clay, or construction. He will gradually start to preplan, though the work grows spontaneously as he works. Although designs may represent real or imaginary objects and may be given a name by the child, a painting is an enactment of a dream, and he lives through the experience as he works.

Later, children use materials to create symbols, usually, though not always, recognizable. Teachers need to learn how to look at these symbols and understand in what ways children use exaggeration to tell what is important to them. When children are encouraged to develop their own ideas, their work is extremely expressive. Young children do not usually use color realistically, but expressively. For example, a four-year-old painted hair her favorite blue to show that the hair was beautiful.

Planning the Art Program

When the teacher understands that child art is a serious venture, not entertainment, she will plan a program which offers every child the maximum possibility for satisfying experiences and growth. She will make sure that all children have a variety of two- and three-dimensional experiences in the basic media: paint, clay, collage, block building, and construction with wood and other materials, as well as many opportunities for exploration and invention. Through experimentation with many materials, children learn the possibilities inherent in each one. The teacher must base the program on the use of these materials, and she must be able to distinguish between them and experiences such as found object printing, party decorations, and other activities which are fun occasionally but do not offer young children possibilities for learning and exploring in depth.

In planning the program the teacher will be guided by the former experience of the children and by the space available. She will plan for group activities and for individuals to work alone. Some experiences in groups are important because children inspire one another and a group will often attract a child who has not had the courage to try a material alone. For example, Marina, who was five, could make few decisions in any area and had never tried to paint. After groups of her classmates had painted together several times, the teacher at last was able to persuade Marina to try to paint. The teacher commented on the colors she chose to put together. After several weeks Marina developed competence, enjoyed painting, and often elected to do so alone. Painting was one area in which she was making decisions. The teacher will decide how large the group ought to be. It might be half of her group, or it might be ten children, or only four or five. A group has the added ad-

vantage of giving the teacher an opportunity to give those children her undivided attention. Thus she is right there to encourage with a nod or a word, an achievement, a discovery, or a personal expression.

On certain days when a group of children are using the same material, the room may need some slight re-arrangement. Tables may need to be put together for painting, or space made on the floor. A large group involved in block building may need another kind of adjustment. If many children are working with clay, an alternative placement of tables may have to be devised. Strong tables or benches are desirable if much woodwork is to be done, although it is possible to do woodwork on the floor. Wood, and scrap materials that can be combined with it, must be readily available so that each child can make his own choices. When an activity is finished the room should be put back in its regular order.

At the beginning of the year fewer activities should be offered and new ones introduced as children grow in their abilities. In most groups painting is introduced first. Opportunities for drawing may be offered, too. A most successful approach is to see that children who are painting are always given the three primary colors and white, then black. The result will be that even three-year-olds starting to paint become aware of each color and can discover how, mixed together, they make new colors. For young children, learning about mixing does not seem to be a step-by-step process, but rather one of creating order out of the spontaneous effects many three's achieve. For added stimulus, bright green, orange, and purple may be offered later, but not until children know how to make them. Teachers should not mix paints for the children as this discourages self-reliance and experimentation. Since other art activities will be part of the curriculum, the teacher will have to decide how soon to introduce them. She has to decide whether it will be another two-dimensional project, like collage, or three-dimensional, like clay or construction.

Cutting and pasting are two separate activities for three-year-olds and some four-year-olds. Cutting is a difficult skill for three-year-olds to master and one that they enjoy tremendously. They do not want to feel that they must paste what they have cut. It is enough to cut little pieces of paper and pile them up. They learn the technique of cutting through making random shapes, and when they have gained control, probably by the time they are four or five, they will be able to cut the shapes they themselves desire. It does not help the process, and may be harmful, to ask children to cut shapes that have been drawn by an adult. Since cutting and pasting are separate activities, a separate table may be provided for each. By the time children are four or five, cutting and pasting become one activity, and a table may be set for collage, which materials to put out and in what sequence—at times colored paper may be chosen, at other times, textured materials; while at another, patterned fabrics or paper may be added.

To groups of three-year-olds and other children with no previous

experience, new materials should be introduced more gradually. The teacher must decide how many choices her group can handle. As children can be overwhelmed and confused by too many choices, it is essential to offer them enough, but not too many. Four-and five-year-old groups who have worked with all the basic materials should start the year with fewer choices than will be offered later. Children do not naturally tire of working with paint, collage, clay, and wood, and the teacher should present these materials as having infinite possibilities for them, now and later.

The teacher selects that day's activity and sets out any special materials necessary. In addition, all materials with which the children are familiar should be available at all times. For example, it should be possible for a child who wants to make a collage to get the materials, paste, and scissors himself. But on certain days the teacher will set out a collage table as an activity for a group.

Art is a part of life and related to nearly all school experiences. Children learn on school trips to notice a variety of colors, textures, and shapes. The skilled teacher can help them to relate thier observations to what they do in the classroom. A girl notices fresh spring grass, and the teacher says, "That is just like the green you mixed today for your design." Tom notices a tall building, and the teacher comments, "You made a tall building out of blocks yesterday." By her awareness of what is in the world and the many alternatives open to children in their work with art materials, a teacher will plan a program that offers them rich and rewarding experiences.

—Motivation and Guidance

A teacher plays a vital role in encouraging children to develop their involvement in art. She must be aware of what best motivates each child, how he sustains effort, and how she can best give supportive guidance. A teacher must never impose her own ideas on a child, but must offer him alternatives he can use to make his own choices and give him a hint that may spark his imagination.

In the earliest stages of art education, materials presented in an inviting, workable way offer sufficient motivation for young children. Occasionally a teacher may lead children to discuss a new material, but words are seldom necessary as three-and four-year-olds approach materials with delight and purpose. After children find out what a material will do, they are concerned with ways in which they can organize it. When children who have explored two-and three-dimensional materials start to use them to make designs, a few words from a teacher may open up new alternatives, or she may give them inspiration to be more inventive in creating block-building structures, clay or wood constructions, or paintings. Such motivation may be appropriate for an individual or a group. Often a descriptive comment about new organization of color, shape, or size which a child has achieved will motivate him to take still other new directions.

By the time children are using materials to suggest subjects, some motivation from the teacher may help each boy and girl to focus on a personal experience important to him. The teacher must always phrase her words so that a child who has come with an idea will carry it out, and so that the suggestion will offer the children a wide variety of choices. A teacher of four-and five-year-olds, observing that interest in clay had declined, offered many alternatives in suggesting that each boy and girl choose to do an animal recently seen at the zoo, or a pet. The children talked about their memories of the animals they chose and the characteristics of the animals. Each child made a strong expression of an animal in clay. The success of this experience carried over, inspiring the children to model independently many different subjects in clay.

In motivating a teacher must make her suggestions open-ended. Thus the child who is involved in making designs will feel free to do so, and the child who has come with an idea will carry it out. She must phrase her remarks so each child will be inspired to find his own idea.

By studying paintings by many children of an age group, a teacher can determine the subjects that are significant for them. By living daily with the children, he will know, in addition, their interests and concerns. Four- and five-year-olds usually express subjects centering on themselves, their families, their friends, animals, recent events, and stories.

A teacher of five-year-olds planned to give a motivation about the rain. She planned to ask questions about the colors, what the children did in the rain, and what clothes they wore. However, the children started talking about parties, and so she said, "What colors does a party make each of you think of? Who has been to a party lately? What did you do?" The children described both indoor & outdoor party experiences. Charlie said, "I'm making a design of party balloons." The painting was one of the most sensitively organized designs he had ever made. Steve made "Me and my Dog Playing," and Jane, "Me and Mommy and my Baby." The other children made highly individual paintings suggested by the "party" motivation.

Children should not become dependent on motivation given by the teacher, but as a result of these experiences should rather become increasingly able to focus independently on personal ideas and experiences. A good discussion conducted by a sensitive teacher helps children to become inwardly motivated to make their own experiences concrete and to express them through personal symbols and arrangements of form and color.

There are a variety of ways in which a teacher may give guidance in art. As far as possible she must protect each child from distraction and must help him to concentrate. At times a teacher can help a boy or girl to refocus if he is disturbed as he works. Often words are unnecessary, for a teacher can communicate with her children in many ways,

by a gesture, a glance, or her sincere interest. Four-year-old Sara was painting, when sounds of laughter in the doll corner caused her to turn around; she put down her brush. The teacher was looking at the painting, thinking how fine a beginning Sara had made and debating whether or not she should say anything. Sara caught the teacher's expression, picked up her brush, and continued painting.

As in other areas, an important aspect of teaching art is making each child in a group feel that he has at all times the full attention of the teacher. Even though a child may want to work in privacy, he must feel that he has the sympathy of the teacher when he needs it.

A teacher must be concerned not only that children develop an appropriate attention span, but that they continue to be involved in their work. If a child no longer is sensitively involved as he repeats a particular way of working, the teacher may help him to find courage to move on by trying something different. If he has made nothing but coils of clay for a long time, she might offer him more clay, suggesting that he might like to build some different shapes, adding, "Perhaps you can use your coils with it, too." Or if a child repeats a way of painting, the teacher might say, "Could you make some other shapes with your stripes?" The tone used is important, since what the teacher says must be inspiring but not directive. It must always be kept in mind that three- and some four-year-olds gain self-confidence from repetition, and it is a subtle art for a teacher to know when she should help a child to the next step. For example, if three-year-old Mary has been overpainting so that she makes a hole in her paper, the teacher might offer her a piece of paper in a way that Mary would be free to say, "Yes," or "No." When ready for the new step, she will accept the new piece. A child is usually aware when he takes a step forward. Mark, four-and-a-half, in talking to his teacher about what he had learned in school, said, "When I was in the three's, I painted a hole in my paper. I don't do that any more. Now, I know what I want to do and do it."

Children who have not had certain experiences at the appropriate age may need to make up for it later. Didi, five years, came to a school where individual art was encouraged. Her paintings, while not stereotyped, were stiff, her use of paper space was not free and spontaneous, and she seldom mixed any colors. One day the teacher asked her whether she would like to try to mix some new colors on the tray. At first Didi hesitatingly did so. The next day she spent almost an hour mixing colors, then covered her paper and painted over and over as do three-year-olds. When she finished she cleaned up neatly. The teacher was accepting of her experimentation and did not expect a product. Didi continued thus for several weeks, and the teacher made comments about the new colors she mixed and about the way she had arranged them over her paper. Then one day Didi painted a spontaneous painting of herself playing with a friend in the country. The colors were rich, the subject was personal and lively, and the picture space was used in an interesting way. Didi had needed to experience exploration of the

material in order to work with freedom. This experience had been denied her in the formal nursery school she had attended.

Good teaching encourages growth. A teacher must learn what growth is at the various stages of development, and what it is for the many individuals within that level. What may be retrogression for one child may be growth for another. Growth never proceeds in a steady upward line, but usually goes up and down within each upward peak.

Appropriate skills can be taught when a child is ready and needs that skill. Skills should not be imposed. However, techniques learned at the right time give a child the mastery to express himself with freedom and spontaneity. For example, when a child is bothered by dripping paint, a teacher should show him how to wipe his brush on the side of the paint jar or coaster. If he wants to keep his color true, he can learn to wash his brush in water and wipe it on a sponge. It is helpful to show a child how to hold scissors, and perhaps in the beginning a teacher may hold the paper for him as he cuts. Similarly, a teacher may show a child how to secure wood in a vise, or she may hold the wood pieces for him as he hammers. He must be shown how to use a saw when he is ready for it. When children have explored clay and want to build more solidly, a teacher may show them ways to join clay together securely. Teaching such skills at the appropriate time helps children toward competence and independence. However, "tricks," such as particular ways of using a paint brush for special effects like stippling, should not be demonstrated. Using a tool for a particular effect is something that should be discovered and developed by the child himself.

A teacher must respect, but not over-emphasize, the product. Process and learning are of most value to the child. However, the product has value in being part of the process, and it represents the accomplishment of the child. Consequently, comments to the child about the product should be descriptive and should relate to learning and accomplishment. Some art activities have products of limited durability. The clay work of very young children can be returned by them to the clay bin after the teacher has accepted, by word or gesture, the effort of each child. Often it would not be possible to preserve the fragile clay pieces of three-year-olds, and therefore it seems best to advocate returning all to the clay bin. Children cooperate well in this when they realize it will give them more clay to work with throughout the year. By four and five years, children have usually learned to build solidly in clay, and they can keep some pieces and perhaps occasionally take one home carefully wrapped.

A teacher shows her respect in the way she looks at and handles a piece of artwork. She should help a child or herself carry a painting carefully so it will not drip, to a safe place to dry. She should prepare a shelf for three-dimensional work.

It is doubtful whether the habit of carrying art work home daily originated in the desire of children to do so. Often this work gets muti-

lated on the homeward journey, and it is difficult for parents to give the daily painting the supportive response the child's activity deserves. It is a wise practice to send home selected art work at intervals. Of course, exceptions will be made for birthdays and holidays when a child asks for something to take home.

It is part of the teacher's responsibility to enlighten parents on the value of art experiences for children, to explain to them not to ask children for daily products, and to tell them something of the development of child art and the tremendous learning that takes place as children explore materials. Parents are usually grateful to the teacher who helps them to learn what to look for in their children's work, and appropriate comments to make about it.

Four-year-old Jenny, who was not self-confident, said one day, "My mommy always says my paintings are wonderful—even the horrible ones." Jenny's teacher said, "Let's look through all your paintings and choose those which you feel are best to take home to your mother." As they did so together, the teacher mentioned some particular fine quality in each one of the chosen paintings. The teacher later told Jenny's mother of her daughter's accomplishments in using materials so that they both could look at her work as an extension of the learning process and could become aware of its individual quality. Superlatives of indiscriminate praise do not build a child's self-confidence, do not recognize accomplishment, and do not imply that further goals can be reached.

Evaluation of Teaching

Children sense what their teachers value. Approval or disapproval can be felt any time a teacher looks at a child's art work. Teachers, therefore, must learn all they can about children and their art so that their reactions are sensitive and founded as much as possible on knowledge.

It is revealing to study children's art work, and a teacher should try to keep in mind all that each child does in both three- and two-dimensional materials. Paintings, because they can be saved, can be carefully studied. The most experienced teacher can learn increasingly about the creative growth of a particular child as well as that of children in general. If a sequence of paintings, done over a period of time, are laid out on the floor, a teacher can see accomplishment, invention, and organization which she has not noticed during the busy working day. She will also see when the peaks of progress have appeared. She may at this time decide ways in which she can give the child support or inspiration. If she contrasts groups of paintings of various children, she may find those characteristics most imaginative and unique to each child in order to encourage them. Even the overpainted experiments of three-year-olds can show amazing individual differences.

Study of art products reveals much about a child, but teachers learn ways in which children are growing and learning by observing

their actions and by listening to what they say.

In considering her program, a teacher must constantly evaluate her teaching. She must consider how the program suits the group as a whole, and she must give careful thought to each individual within the group.

It may help a teacher to ask herself some questions, as for example:

Is the program set up so that each child can work, with involvement? This question leads to re-evaluation of the setup of the room, the materials offered and their availability to children.

Is each child learning to concentrate for longer periods? There should be a re-evaluation of the choices offered at one time and the opportunity for quiet working times.

Is the art work of each child unique, and does it show his own personal way of using materials? The teacher may think of new ways of being supportive of those things that are unique in a child's art or of ways that she can help him to build confidence in his own way of working.

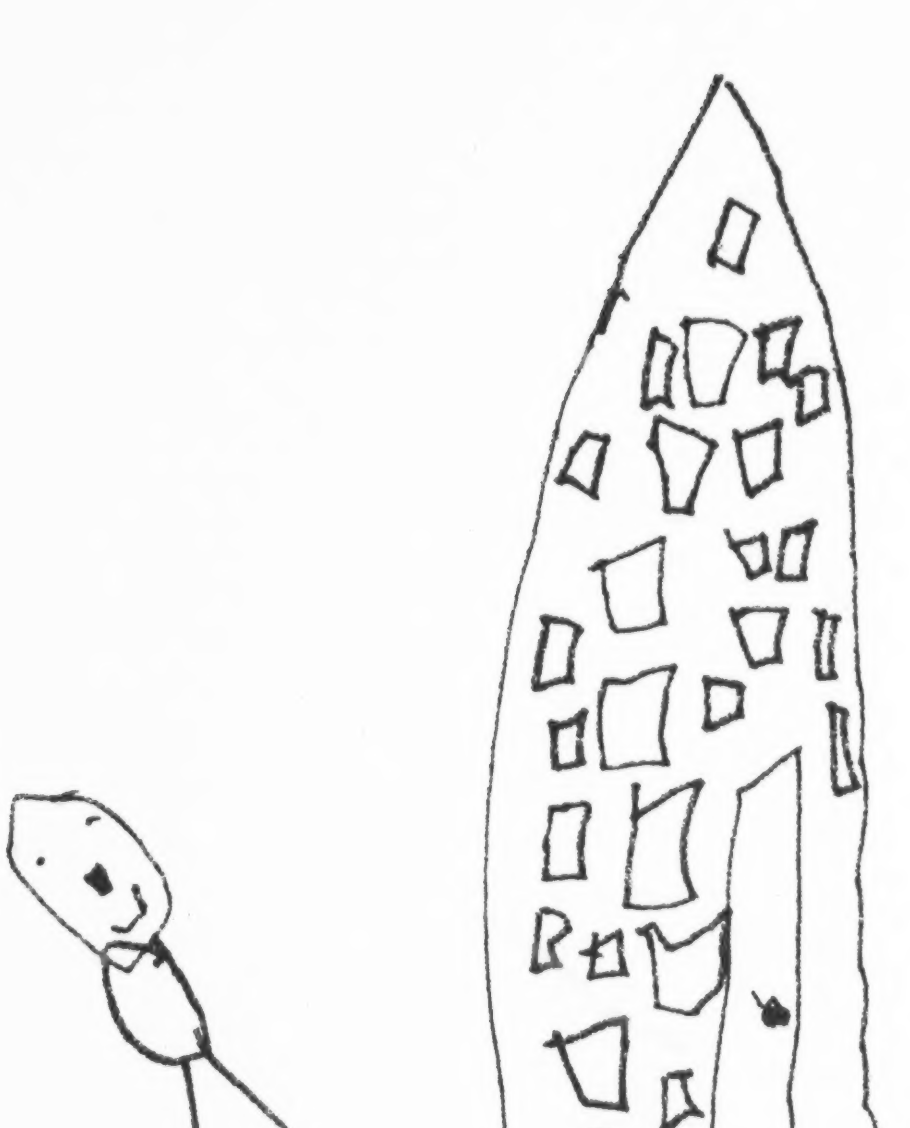
Has each child had a variety of two- and three-dimensional art experiences? Perhaps some individual children might be encouraged to work with more materials or to work in greater depth with others.

Is each child using materials with increasing sureness? Perhaps some children need help with skills or need more individual support while they work.

Does the work of each child show increasing order? Some children need special inspiration in organizing materials with imagination; materials might be offered in a new way so that the child will be more selective in combining them to create his own order.

Studying children and their art should increase a teacher's joy in the adventure of offering them exciting and rewarding experiences in creating art.

Lois Lord draws upon many years of experience with children. At present she is on the faculty of the Bank Street College of Education, working as art consultant to classroom teachers in the Head Start, and Follow Through programs. She also teaches art workshop courses to graduate students at Bank Street. From 1950 to 1969 she was a teacher and art department chairman at the New Lincoln School. There she taught classes in art and photography and developed curriculum for children from the nursery through the high school. From 1950 to 1960 she was an instructor in the children's classes at the Museum of Modern Art in New York City. Miss Lord is the author of *Collage and Construction in Elementary and Junior High Schools.* Her articles have appeared in journals such as *School Arts* and *Young Children.* The film *Collage – Exploring Texture* was made in her art class at the New Lincoln School.



ART IN CHILDREN'S LEARNING

ETHEL YOUNG

Child development is unitary. Scientists and educators separate it into component parts, cognitive, motor, affective, etc., in order to focus upon a small segment. Such sharp distinctions do not exist in nature. Kindergarten teachers know that there will be a larger proportion of first grade reading failures among the children who can not skip than among those who can. In young children the ability to draw is highly correlated with intelligence; the Draw-a-Man Test has for many years indicated readiness for reading. Cognitive development is served not only by activities that are primarily cerebral but by all stimulating and rewarding experiences.

Ethel Young's primary concern is learning. She suggests that art activities contribute to manual dexterity, aesthetic awareness, a sense of self, and perceptual development in many sensory modes. She uses art activity to enrich many areas – reading, math, science, social studies, and language. She relates the arts – music, dance, literature, the visual arts – using each to enhance the others. The practitioner will be especially interested in the activities suggested, their purposes, methods of presentation, essential and supplementary materials, and sources of supplies. Not all of these activities are "art," strictly speaking. They are activities using art materials and ideas that will engage young children and help them grow.

Art activity offers all young children equal opportunity to succeed. Those who have had some previous exposure to the materials and experiences of art, and those who have been deprived of these experiences are close to the same starting line developmentally. It is in this area of the prekindergarten program that the disadvantaged child's confidence in his ability to learn can be most readily implanted. In fact, he is often at an advantage. Free of the pressure to achieve often imposed on his more privileged peers, and without the sometimes distracting alternatives of too many choices, he makes original decisions and creates refreshingly clear art ideas. He is experimental, curious, and exploratory. He treasures and exploits the opportunity to use the attractive and

responsive materials of art.

Child art educators have observed that children of every cultural, national, ethnic, socioeconomic, or religious group anywhere in the world go through the same stages of symbolic representation. Later elaborations may be the expressions of unique rituals or cultural experiences, but just as the child goes through an orderly and relatively unexceptional sequence from crawling to walking to running, and from babbling to talking, the steps in the development of the symbolic vocabulary are universal: from lines and spots (scribbles) to shapes that incorporate the concepts of roundness and squareness to eventual arrangements and combinations of these shapes into both literal pictures of man, house, tree, or the letters of the alphabet whose design becomes the symbolic combinations of shapes which we call written "words." This general sequence of developmental steps is paralleled in expressive outcomes with plastic materials, like clay. The child usually starts with little bead-like balls, and linear "worms," and goes on to complex elaborations, which become more representational as he discovers the idea of form in the objects around him.

Although the sequences of art expression are orderly, they do not necessarily occur in the same way or at the same age in any two children. Given these basic similarities, each child's spontaneous interpretation of an art task is individual. The flexibility and fluidity of art materials makes it possible for each child to experience a quality of change. Color especially helps to introduce him to this idea. Form and structure give him an awareness of the intrinsic nature of matter, sometimes obdurate. But it is through the opportunity to manipulate and discover some of the functions of material, that he gains a sense of mastery and control.

Art experience occurs and can be exploited for learning in every area of early school experience. On the playground, using design toys, in block play, in cooking periods, in music and dance activities, and on walks and more extended trips, children are continuously building a store of perceptual ideas and learning to apply them. Through this conception of an art program, the basic symbologies can be acquired, reinforced, and then rearranged to emphasize root ideas of mathematics, of reading and writing, of social learning, and of aesthetics.

Children become aware of the reality of color when they conceive of it as the color of things, i.e., sky, eyes, houses. A hole is roundness dramatized. Rain is a straight line. Many other sensory games and experiences give added dimension to developing recall and discriminatory skills: the odor of a lemon conjures up a specific image of yellow, round fruit.

The preprimary classroom is a sensorium. If one considers, very broadly, the total environment as the vehicle and materials for art, then children can more easily express and communicate their meanings and their understanding.

As with every aspect of learning, whether this implies learning

about oneself, learning how to be part of the school and family communities, or learning how to acquire the necessary "code" in order to read, write, and measure, the child must be a participant. He must become engaged or involved. How does he become involved?

In the beginning, a child tries to make meaning out of his world by playing out all the roles and the people he finds there. Thus he plays life games of house, store, fireman, television super-hero, and bad man. He "tries on" the ideas of all the shapes, colors, and dynamics of nature. His art occurs in what he sees and in learning how to look. It happens in his dressups and in his discovery of the sounds, movements, and appearances of the trees, animals, people, machines, stones, grasses, flowers, buildings, rain, wind, oceans, rivers, puddles, mountains, and bugs. His pictures—drawn, painted, or constructed—are his means of restating some of his experiences; a way of recording his impressions, his questions, or of supporting and clarifying his subjective feelings and nonverbal ideas about his family, his friends, his security and insecurity, and himself! A collage, for example, can be a statement about a trip to the store, the beach, the playground, the park, a factory, a road-building project, the zoo, the farm, the backyard, the classroom, or his home!

Whether an image is recorded in the child's mind or caught in an art product, or momentarily expressed in body movement, he is better able to translate his learnings into concrete, meaningful realities in his everyday life experiences, given opportunities to review, to practice, to recreate his own conceptions. For example, a sandwich can now be viewed as having form: it can be shaped like a triangle or it can be square or round. An orange is round like a ball, and is called by the name of its own color. All of his world comes into focus through his awareness of its structural and visual forms, its differentiated colors and textures, the many dimensions peculiar to its myriad parts. On the playground, swings which move him through space along a curved arc; a crawl tunnel, inside of which he can adapt his own body shape; the round wheels of a tricycle; a square box to climb on—can reveal to a child a sense of his own capacities to be a part of the world, to fit himself to its forms, patterns, and spaces. Through the costumes and furnishings, dolls, and other props in the playhouse corner, he is developing an aesthetic awareness of design, color, and order. Everywhere in his school experience, the child makes increasing use of his art learnings.

As he expands his expressive horizons, the young child increases his ability to communicate. Art activities lubricate his enlarging vocabulary. He begins to need words to identify and to define, to label and connect, and to understand his newly acquired concepts.

But he lives in an increasingly complex culture—one which bombards him with thousands of impressions daily through television; one which gives him, however inexperienced he may be, a certain sophistication in his learning style. The world he now lives in, though faster

and, for many, easier to traverse, has cut him off from the natural world where peas grow in pods and every child can see them. It is a highly classified world, which makes his school experience, if he is a city child, different from that of a rural or suburban child.

Art activity can be a core curriculum in which many deep roots and attitudes relating to later school experience are established. The teacher must develop a strategy for teaching or guiding a group of children through fundamental experiences, especially sensory experience, appropriate to the environment and the cultural realities in which they are living.

The teacher presents or stages a series of settings and ideas in a clearly stated, orderly environment and in a sequence of learning steps. It is in this presentation that both the discipline and the freedom to explore are offered the child. By means of this presentation, beginning ideas and information are dramatized and reinforced within the realms of visual, aural, motor, social, emotional, perceptual, and sensory experience. Thus the child's original concepts of self, color, shape, form, motion, rhythm, pattern, and sound are learned and practiced through many means of articulation.

A teaching strategy for concept building consists of several steps:

a. Period of *orientation* or *exposure* –

The initial environment – the room, furnishings, walls, equipment, even the teacher's clothing can emphasize the colors, shapes, ideas about dimension, and textures which are to be introduced.

i.e. The color palette should introduce the primaries and black and white.

Crayons, and other color media, should be stored and presented in color-matched containers. (see resource chart)

Easel painting can be experienced on large round, and triangular paper – as well as the conventional rectangular shape.

b. *Exposition* (use of reinforcing activities, which help to define the concept)

i.e. Use of design toys – mosaic tiles, pegs and straws, form and shape puzzles, and form boards, color paddles, and tinker toys.

Books and Songs – identification games and conversation: "Jennie Jenkins," "Mary Wore a Red Dress."

Discovery games – searching for color labeled objects, or those which have shape names, in the classroom, on a walk, etc.

c. Concrete experiences for *review* and *practice*.

i.e. Art projects – painting, drawing, collage and construction.

Use of books, pictures, puzzles, games, and toys.
Playground activities.
Circle games and dances.
Songs and chants, which incorporate references to concepts.
Color mixing – paint, frosting, "chemistry."
Use of balloons, kites, costumes, hats, banners, and flags.

d. *Elaborations*

Introduction of new ideas, built on fundamental learning:
i.e. Secondary colors
solid forms

Introduction of activities which enlarge the spectrum of color, or which suggest combinations of shapes into new arrangements. Collaboration – i.e. mural painting.

e. *Origination*

The free ongoing painting, drawing, and other play of children will result in compositions incorporating the new ideas acquired. Through free opportunity to apply, practice, and review, concepts are internalized and become the child's tools and techniques with which he creates his own meanings. The beginning of highly original art products, and more important, of taste and aesthetic style, grow from this step.

Experiences, such as going to a gallery, having a visiting illustrator "draw a story," or a trip to the zoo, farm, beach, park, or factory – can stimulate and evoke many expressive interpretations. For example, animals can be created by a collage of cloth, fur, or colored yarn. The collage based on forms that suggest the shapes of animals emphasizes texture, form, color, and pattern.

The children can be asked how the animals move. This also helps them to recall form and rhythmic values of the motion. The farm or zoo can be recreated by arranging toys such as blocks, rubber animals, pegs, or tinker toys.

Young children are sensory learners. Although they have relatively few words, they can become fluent in many "languages" – many other ways of expressing themselves. Their approach to life is direct and unselfconscious, especially when the experience offered – as through art activity – is evocative and allows them to perceive the world – to learn – at their own level of development.

Art experience offers a mirror of the child's individuality; his interpretation of ideas, materials, and arrangements are how he alone perceives himself and his world. They attest to his unique personal experience.

The chart that follows suggests a number of preprimary activities, the purposes they serve, ways of introducing them, essential and supplementary materials, and sources of supplies.

ACTIVITY	PURPOSE	MATERIALS NEEDED
Felt tip pens with round and square drawing paper.	Introduce and emphasize round and square shapes.	Enough pre-cut paper for each child to experience both shapes as often as he wants. Range of colors in felt tip pens for each child.
Collage construction with round shapes.	Elimination of all other shapes emphasizes roundness and variety of materials that are round.	Round, fairly stiff paper, washers, tissue paper, buttons, muffin cups, etc. One piece of roving cord is interesting contrast. Glue.
Play dough in three primary colors.	Introduce three primary colors.	Enough play dough in 3 colors for variety at table. Knives, molds (round and square), orange sticks, etc. for each child.
Easel painting with black and white paint on colored paper.	Introduce black and white.	Paper precut in round, square shapes to reinforce shape concept.
Observing then drawing own face.	Knowledge of self, parts of body. Roundness concept.	Precut round paper. Hand mirrors, felt tip, crayon, oil chalk, pencil, whatever you feel is best.
Draw picture of self.	Reinforces concept of self and body.	Fairly long pieces of paper. Full length mirror.
Food-face. Cooking project, to be eaten as snack.	Another media for concept of face.	English muffins, cream cheese or butter for glue, carrot curls, strip of wiener, etc.

SUGGESTIONS FOR PRESENTATION TO CHILDREN	SOURCES OF MATERIALS	SUPPLEMENTARY CURRICULUM AIDS
Introduce names of shapes into conversation.	Standard suppliers, printers and paper manufacturers, packaging manufacturers. Scrap pile.	Rubber shape games. Shape dominoes. "Patti Round, Wally Square" Jean. "Snail, Where are You," Ungerer. Form boards.
Talk about making a round picture. Talk about finding rounds everywhere you look.	Commercial paper suppliers, electronic firms, parents.	Round mosaic toys. "Red Light, Green Light" MacDonald. "Round, Round and Square" Shafer.
Continue to reinforce color and shape in conversation. Pick out reds in room, etc.	Electronic throw-aways for molds.	"Red is Never a Mouse" Clifford.
While child is painting, talk about black and white as color. Color of paper can be discussed also.		"Colors, Colors, all Around" Scott. Movement of body into square, round.
Have plenty of time to talk with each child about his face, himself, his parts, wherever he leads in conversation. Repeat at a later date.		Flannel dolls. Polaroid pictures of child.
1. Go with child to full length mirror, talk about and touch parts of body, his total self, color of clothes, etc. Allow plenty of time. 2. Take a trip around the child tracing his body outline, naming parts as you pass them. Cut his "self" shape out. Describe it as a "Mary" or "Jim" shaped piece of paper, so that he is not restricted to formally representing himself.		Movement of different parts of body. "Peter's Chair" Keats.
Much conversation about creating face with all these edibles. Parts of face, kind of edible, etc.		Pegs. "Everybody Has a House and Everybody Eats" Green.

Ethnic enrichment:
This will vary greatly with each class. Watch for the variety of cultures in your class. Incorporate each at least once during the year. Use movement to ethnic music, use foods, use specific art projects to go home for special festivals, have a festival during class. Take plenty of time to tell class about the special quality of this event. Be sure that all cultures are equally emphasized.

ACTIVITY	REASON FOR ACTIVITY	MATERIALS NEEDED
Painting letters of name.	To introduce picture of name and letters.	Capitals and lower case cut out and assembled in each child's folder. Use water color or whatever seems best.
Name Cookie.	Chemistry of baking. Another "picture" of name.	Sugar cookie dough cut into rectangles, placed on aluminum foil. Plastic letters, oven, food coloring, professional baker's dyes.
Growing Chart.	Creates for child a picture of himself and how big he is. Creates feeling of being part of class. Sameness and difference.	Long, wide paper premeasured in feet, room for child's picture or name.
Collage using seeds, or similar material, with roving cord.	Have child fill in pattern he's made with roving cord. To reinforce seeds (or whatever) come in many sizes, shapes, colors. Form and color in nature.	Pencil for creating pattern then roving cord glued on line, then materials. (Perceptual task – to follow the line you have created yourself.)
Collage with autumn fruits and vegetables.	Emphasize change of seasons, where fruits come from, vegetables grow, etc.	Plate, toothpicks and same variety of food offered to each child – pick for color, shape, texture.
Moving to music as various animals would.	Explore own body – feel of moving with other children as group – greater awareness of animals. Making a picture with your body.	Carefully chosen music.

SUGGESTIONS FOR PRESENTATION TO CHILDREN	SOURCES OF MATERIALS	SUPPLEMENTARY CURRICULUM AIDS
Put letters in front of child in correct order. Talk about their name, letters that make it up, etc.		Magnetic letter boards. Lite Brite Letters. "The Alphabet Tale" Garber. Games with names of group. Brian Wildsmith's *ABC*.
Discuss color, feel, taste of cookie before and after cooking. Place letters in correct order in front of each child. Have child print name, then bake.	Supermarket.	Letter games. "Sign on Rosie's Door" Sendak.
While measuring each child and marking his spot, converse about how straight he stands, parts of body, "this is you, this is how high you are, you're next to your friend Mary." Repeat later in year.		"The Growing Story" Kraus. Polaroid picture of child.
Present the steps of the collage one by one, discussing patterns, following line, shapes, colors, etc.	The supermarket for legumes colored popcorn.	Mainly depends on materials you use; if seeds – follow up with growing things.
Talk about growing cycle, where and how food grows. Works well around Thanksgiving.		Autumn leaves, nuts, berries, "Wonders of Nature" Golden Book. Pictures of animals preparing for winter.
Use after zoo or farm trip. Discuss with children how they and animals feel.		"1, 2, 3 to the Zoo" Carle. Animal lotto.

Moving to music of certain tempos.	Explore body and feel of music – hard, fast music, soft, fluffy, lyrical music. Relate to visual (art) vocabulary: rhythm, pattern, tempo.	Appropriate music.
Trip to museum or art gallery.	Explore their community. Knowledge of what other people create.	
Movement either at museum or soon after at school.	How bodies can express what a painting or sculpture expresses: the dynamic ideas in a painting or sculpture can be shown and discussed.	Music if desired. Transitor tape recorder for portable background sound. Can record children's comments.

ACTIVITY	REASON FOR ACTIVITY	MATERIALS NEEDED
Listening Walk.	Explore world, sharpen audio sense: learning to discriminate and to sense the integrated relationship between art and music.	A path that will provide variety and contrast.
Special uses of playground.	Reinforce exploring world, senses body. Relevance to abstract concepts of shape, color, texture, sound, movement.	Place for movement, scarf, if desired. Place for painting (may be on cement), music. Chalk for sidewalk drawing, stick for sandbox writing.
3-D garden.	Child creates own spring garden.	Paper plate, play dough or clay, spring flowers, twigs, weeds.

Talk about their body and things in world that correspond to mood; wind, tree branches, strong tree trunks, etc. Play pretend games – secret stories "show me."		"Gilberto and the Wind" Ets. "Do you Move as I Do?" Borton.
Talk with children beforehand about where they're going and what to look for.		Display of children's sculpture or art work. "A Step into the World of Modern Art" Macoy.
Help children feel what painting or sculpture might be saying through talk, pictures, music. Use the children's own art. Move to each other's pictures, constructions.		"A Room of My Own" Hill.
SUGGESTION FOR PRESENTATION TO CHILDREN	**SOURCES OF MATERIALS**	**SUPPLEMENTARY CURRICULUM AIDS**
Record what the children say. Talk about using ears, exploring. Later in year take walk with eyes shut.		Use of tape recorder. Do you hear what I hear game. "All Sizes of Noises" Kuskin.
Besides using these and other similar enriching activities (stick drawing in sand box, building mountains, rivers, in sand), remember rhythm of swinging, different focal points at top of jungle gym, walking like animals, going through maze, etc.		"Watch me Outdoors" Bowman Series. "In a Spring Garden" Keats.
Set stage by placing play dough or clay in plate flattened out and ready for objects to be stuck in. Have natural objects with variety in height, texture, color. Talk about new growth, color.		Animal lotto. Baby animal pictures. "Butterflys and Moths" Mitchell and Zim.

Glue tissue paper or cellophane inside frame.	Perceiving negative shape. Show beauty of a finished product and changes when light shines through it.	Packaging, interesting frames, many colors and shapes of paper, tissue.
Print a kite.	Finished project can be used by child. The child has satisfaction producing art he can use.	Fodeless, origami or newspaper, in different shapes, tempera thickened with liquid starch. Use sponges, thermos bottle tops, vegetables, different printing tools. Attach string and streamer tail when dry. (Paper shapes for tail.)
Make a hat.	Emphasize color, newness of Spring. Provide new dimension for collage construction: a collage to wear!	Paper plates or heavy paper in sailor hat shape, bonnet shape, etc. Flowers, feathers, tissue paper, glitter, jewelry, buttons, miniature toys. Avoid offering too much.

ACTIVITY	REASON FOR ACTIVITY	MATERIALS NEEDED
Make slides.	Children create own slide show. Experience with different art materials. The idea of enlargement, magnification, miniaturization. Big and Little.	Prepare many slides, using frames from commercial company or your own and transparent paper. Thin felt tip pens work best. Combine finished slide show with light or music if desired.
A mobile or stabile using only man-made objects.	Helps child sort out natural and man-made items.	Styrofoam, wires, electronic parts.

Talk about creating picture with paper and glue and magic when light is added.		"The Sense of Wonder" Carson. Prisms, color wheels, color paddles, kaleidoscope, cellophane glasses (specs).
Talk about making a picture with what's in their hand when dipped in paint. Talk about shapes, colors. Talk about kites and what you can do with them. Be available to keep child from getting too much paint on kite.		"Lee San Flies the Dragon Kite" Herrmanns. Sounds that the wind makes. "Gilberto and the Wind" Ets.
Explain this will be a hat, maybe to wear home or at a parade at school, for Halloween, Easter, birthdays. Talk about spring, colors, new flowers, etc. Tie under chin with roving cord.		"Jenny's New Hat" Keats. Movement to march/gay music. "Caps for Sale" Slobodkina. "Benny's Four Hats" Jaynes.

SUGGESTIONS FOR PRESENTATION TO CHILDREN	SOURCES OF MATERIALS	SUPPLEMENTARY CURRICULUM AIDS
Explain they will draw a picture, then see it on the wall through a slide projector! Discuss the qualities of the paper. *The picture will grow bigger.	Kodak or your local company for frames.	Show slides of class activity or a trip. Use small as well as large projectors. Child can use small projector independently.
Talk about fact this is a "sticking together" picture, no glue. Follow lead of children in discussing materials. Talk about textures, feel, color, shape.	Electronic firms. Scrap.	"Little Red Lighthouse and Great Grey Bridge" Smith. Visit construction site.

Painting containers.	Provides 3-D painting where child can hold, crawl over, crawl in painting job.	All possible shapes, sizes and textures of boxes. Use tempera paint, easel brushes.
Nailing into cork or wood.	To develop motor control, eye-hand coordination. Frustration outlet. 3-D design. Introducing a new adhesive.	Nails, tacks, box nails (long and short). Different shapes for base, if desired. Use different colored yarn or roving cord to weave around nails.
Make sewing cards.	Child will sew his own card. More shape and color reinforcement. Introduce the concept of negative shape: the round, square, triangle shaped hole. Sewing as another way to join material.	Cardboard with different shapes cut in middle. Wire screen stapled over hole. Have at least three for each child. Use rug needles and different colored yarn for sewing.

ACTIVITY	REASON FOR ACTIVITY	MATERIAL NEEDED
Draw pictures on different sizes of paper.	Concept of big and little, math sets. Feel of doing long and short picture.	Paper approximately same width but one long and one short for each child.

Discuss making picture with many sides; an inside, an outside, bumps, corners, etc. Save for block building play. "A box shaped picture," "a tube shaped picture," "a tent shaped picture," etc.	Empty cartons – big and little, toilet paper, other paper, yardage tubes.	"City Rhythms" Grifalconi. Table blocks and peg accessories.
Talk about muscle, eye – how these parts of body are really working hard. Talk about building, making objects to use and enjoy (boats, cars). "This is a picture you nailed together."	Furniture manufacturers and lumber yards, industrial waste.	Hammer and nails at indoor table. "Pinnocchio"
Discuss shapes. Ask child, "What shape do you want?" When sewing, have adult available for needle threading and knot making (time consuming job).	Cardboard separaters from packaging materials.	Commercial sewing cards on other table. Make red, yellow, blue triangle △, round ○, square □, cards (about 6") out of chip boards. Punch holes around edge at one inch intervals. Have clothing shaped sewing cards for paper dolls.

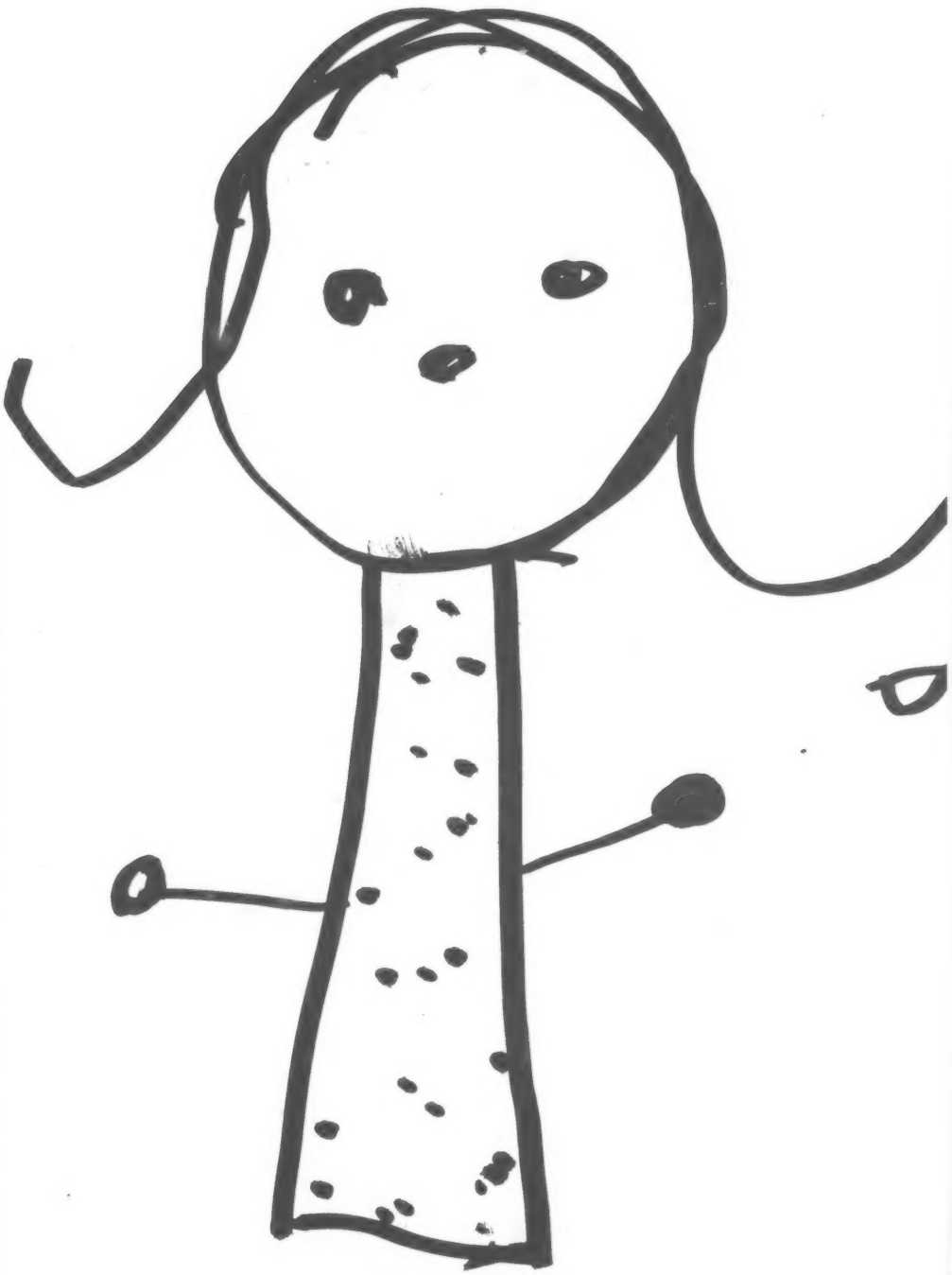
SUGGESTIONS FOR PRESENTATION TO CHILDREN	SOURCES OF MATERIALS	SUPPLEMENTARY CURRICULUM AIDS
Discuss long and short, big and little. Mention concept of sets in math. Follow lead of children in feel of working with different lengths of paper. Could use music as background.		Movement – short, sharp, long, flowing. Pictures from "Hans and Peter" Petrides. "The Growing Story" Kraus. Mosaica: large and small pieces (woodies).

Drawing with large and small paper, large and small felt pens.	Concept of big and little, math sets.	Precut different shapes in large and small. Have plenty for each child, present big paper and big pens separately; then small paper, small pens.

Ethel Young is supervising teacher of the Palo Alto, California, schools. She studied at Hunter College in New York City and at the University of California in Berkeley. Having been a teacher since 1943, she has a long-standing interest in art for young children. In recent years she has worked in the area of compensatory education for preschools, in several capacities: as a teacher educator, curriculum devel-

Talk about big and little. Discuss what's big and little in room. Talk about growing. Make a "living" graph using photographs of the children to show their heights on the graph. Measure them against the wall (life size) graph, in groups, so that they begin to develop an idea of representation and comparison.	"The Very Little Girl" Krasilovsky. "The Growing Story" Kraus. "The Egg Book" Selsam. "You and the World Around You" Selsam.

oper, and consultant. Mrs. Young's publications include *The Nursery School Program for Culturally Different Children* and *The Amazing Life Games Theater*, a guide to resources, such as films, books, and materials, for people who work with young children. She has also written for educational television and served as an author-advisor to educational filmmakers, and is a consultant to *Sesame Street*.



PRESENTING MATERIALS EFFECTIVELY

THELMA HARMS, M.A.

In the article that follows, Thelma Harms gives detailed information about acquiring, storing, and presenting creative materials appropriate for young children. The choice of materials and the way in which they are offered to children is of central importance in preprimary programs. Much of the learning that takes place in the early years grows out of the manipulation of concrete materials. The materials that are selected and the manner in which they are made available to the child reflect the values of the teacher and communicate them to the child. Curriculum decisions are manifested in the choice and use of materials.

Mrs. Harms believes that children learn best when materials are challenging but not frustrating. Variety is necessary, but there should be opportunity to use the same material again and again in order to gain mastery. Increasingly difficult materials can be presented as the child's competence develops. The teacher guides the child's growth by arranging an appropriate learning environment, one in which the child can function with minimum direction from adults.

In dealing with the visual arts, Mrs. Harms points out that the task of the young child is to establish control of materials so that he can use them to express his ideas. Materials which rely on accidents to produce effects that are appealing to adults are not desirable; they run counter to the main direction of development. A good art program helps the child grow in many ways. Although the visual arts need not seek justification in their contribution to cognition or emotional development they do serve these ends.

How effectively children use art materials depends a great deal on the organization of the physical setting in which the materials are placed, the time allotted for use of the materials, and, above all the adult's approach to the children. If our intent is to have children use materials competently and expressively so that the product is an honest reflection of the internal creative process the child has undergone, we should first of all create a functional physical setting for the art materials. Young children are very responsive to cues given by the environment. A closed cupboard means: "You must ask me for these materials—they are mine"; open shelves mean: "Use these whenever you want to." Materials that are in good condition and well spaced on open shelves invite frequent and constructive use because they reflect the adult's value of both the child's work and the materials he is using.

Young children are also enthusiastic about all aspects of a procedure and learn a great deal from being involved in the preparation and clean-up of an activity. Careful planning of both the setting and the procedure of an activity (from preparation through clean-up) can result in greater independence and involvement on the part of the children. Before talking specifically about materials suitable for preschool children, we should consider a few basic ideas about the physical setting and the presentation of materials which contribute to their use.

Organizing a Functional Physical Setting

1. Try to use the outdoors as well as the indoors for art activities, when weather permits. Art materials take on new life outdoors. Finger-painting needs only a table and some cafeteria trays; chalk drawing flourishes on an area of blacktop; large mural size painting can be done on paper tacked to a fence or a building; sand-casting is a suitable activity for the outdoor sandbox or a trip to the seashore. Of course, all materials should be taken indoors or properly cleaned and stored outdoors to complete the activity. It would be a boon to city children if areas of blacktopped playgrounds could be used for art during recess to provide constructive alternatives to random physical activity.

2. Art areas, both indoors and outdoors, should be visible and accessible, but not located in a thoroughfare.

3. Materials meant to be used by children should be stored on open shelves, in good condition, and always in the same place. Through the year, increase the number of materials available on open shelves, as the children learn how to handle them independently. Storage shelves should be placed near the table or floor area intended to be used by the children.

4. Whenever possible, materials should be stored and presented in individual units so that competition and forced sharing are eliminated. An individual box of crayons or a unit of chalk eliminates the confusion of competition for the only black crayon in a large basket meant for a group of children to share. An individual unit also clearly fixes responsibility for replacing the materials used. A child easily sees the sense of putting back what he himself has taken off the shelf and used.

5. All materials needed for an activity should be placed on the shelf together. For some activities, it is helpful to put on a tray all the materials needed for a child to work. For example, a tray for watercolor painting would need to include the paintbox, brush, pitcher to get water, two dishes for water, and a small cloth or paper towel to dry the brush. Paper of different sizes, shapes, and qualities should always be available on an open shelf nearby for use with all two-dimensional media.

General Guidelines for Presenting Materials

1. A variety of basic two- and three-dimensional materials should be available for use at all times. Since materials have innate properties which make different artistic experiences possible, it is as important to

have clay and three-dimensional materials available as it is to have drawing, painting, and other two-dimensional materials.

Basic two-dimensional media:

Drawing: pencils, crayons, felt pens, paint sticks, wet chalk
Painting: brush painting, fingerpaint
Collage

Basic three-dimensional media:

Modeling sculpture: potter's clay, salt-flour dough
Construction sculpture: wood scraps, paper boxes, styrofoam

2. Repeated opportunities should be scheduled for children to work with the same material, for individual expression comes only through successive opportunities to work with the same basic materials. When the child focuses on what he can do that is different with a familiar material rather than what is novel about a new material, he is more likely to employ imaginative invention.

Avoid art activities that rely on tricky procedures and involve chance effects. These are "window dressing ideas," they tend to make an assembly line of the children, and although the products are attractive, they are not individually expressive. It is sometimes helpful in freeing a rigid adult artist to have him blow paint or draw with his eyes closed, but young children do not need this kind of "freeing" experience. They need rather to develop a sense of their own ability to control and to predict the effects of their artistic activity. This is best done by presenting basic materials which are easy to control and responsive to individual differences.

3. With materials that require considerable technical skill, experiences of successive difficulty presented over several days or even a week are needed to introduce the skills in a graded sequence. An example is the introduction of watercolor painting, which requires that children learn to wash the brush between color changes and apply clear water to use a new color. The first day or two it helps to present the activity in its simplest form: remove all the paint pans leaving only the 3 primaries. The procedure for washing the brush and applying clear water can be introduced in this simplified situation. By the third or fourth day more color pans can be added, one at a time. The children are then able to control the necessary procedure and keep many colors clear and usable. Graded presentation of materials that require more technical control often enhances a young child's interest as well as his competence. He has a chance to become interested in the slight additions and variations on the already familiar material. Examples of other materials benefitting from graded presentation are stitchery, mosaic tile, and printing.

4. Materials can be organized for clarity and simplicity by giving visual, tactile, or verbal cues to the steps in the procedure. Pertinent pictures and words help the child remember the procedure he followed with a material. For example, a clear picture recipe to follow while making salt-flour dough makes it possible for a four- or five-year-old to

independently measure and mix salt-flour dough after one guided experience. Having a black line around the measuring cup at the proper level helps the young child remember how much water he has to add to mix dough.

Another example of clarifying an activity is the sorting of collage materials according to tactile properties (all the rough things together, smooth things together, etc.). A child could then take a TV tray and collect the materials he wants to use from all the boxes. Sometimes the teacher might want to suggest that a child try to see what he can make out of the materials in the rough box only. The language- and concept-expanding experiences possible through linking verbal cues to visual and tactile cues are an exciting area for teachers of young children to explore.

5. Adults must remember that their role in a child's art experience is a supportive one. To help a child toward individual expression, the adult needs to collect materials, keep materials in good working condition, set up functional art areas both indoors and outdoors, think through the procedure for preparation, use, and clean-up of materials so that a child can manage as much as possible by himself, work out visual and verbal cues to remind the child of the procedures, and answer the child's expressed need for help and guidance.

Let's define the teacher's role so that it facilitates the child's choices, but does not usurp them:

A supportive adult gives technical help but does not suggest subject matter.

A responsible adult has quantities of materials on hand and in good condition.

An intelligent adult reduces the frustrations and limitations of the environment by planning.

A sensitive adult watches and waits to see what the child is working toward and then helps him to reach the goal he has set for himself.

6. The preprimary years span a period of rapid growth and change in abilities. Age-appropriate materials are a justifiable concern for both parents and teachers. If a child is given a material too difficult for him to manage, the result is frustrating to adult and child. Glue that gets spilled or crayon marks on the wall are sometimes a result of either the inappropriateness of the material to the age of the children or the incomplete presentation of all the things needed for the activity.

Whenever age is used as a criterion, we must keep in mind that individual differences will undoubtedly be contradictory in some instances. There are surely some two-year-olds who can handle materials usually suggested for four-year-olds, and vice versa. The following age-appropriate activities are to be taken more as a floor than as a ceiling on activities. It is also assumed that all the activities suggested for the earlier ages will be available for older children as well, since good toys and materials can be used with greater sophistication at older ages and tend to retain their appeal.

UNDER 18 MONTHS: Some of these are pre-infant needs to explore various levels of toys that stimulate sensory perception: tactile toys – small blocks, dolls, cuddly animals; visual toys – mobiles, cradlegym; movement toys – pull trucks, push toys on sticks; relationship objects – nesting blocks, measuring cups, things to put inside a plastic jar or purse and take out again; auditory toys – rattles, xzylophones, drums, sand and water play. These early sensory-motor experiences form the basis for later symbolic experiences like visual art and language.

18 MONTHS-2½ YEARS: The child at this age needs simple drawing materials like a soft, thick lead pencil; easel paints in 2 or 3 colors; more varied blocks to help size and shape discrimination; props for dramatic play like dress-up clothes, and transportation toys; more extensive sand and water play with different sized pails, small plastic jars to fill, funnels, etc.

2½-3½ YEARS: The child at this age should have available varied drawing materials including crayons and felt pens; an expanded number of colors as his experience with painting develops; varied sizes and shapes of paper and varied brush sizes; and activities involving fingerpainting, clay, and salt-flour dough.

3½-4½ YEARS: Drawing materials should be expanded to include: paint sticks and wet chalk; very large paper and varied size brushes; art activities should include water color painting, collage, construction-sculpture, stringing activities, carpentry, sand-casting, salt-flour dough mixing from picture recipe, as the child seems ready for these experiences.

4½-5½ YEARS: Art activities that demand more technical skill should be introduced, such as: stitchery, mosaics, and simple block-printing. All the basic two- and three-dimensional materials should be included.

7. Remember that the quality of a material is an important part of the experience it affords. Paints should be thick, creamy, and rich in color; clay, soft and pliable but not sticky; heavier collage materials should have cardboard or wood backing. Through their use of art materials, children develop an aesthetic sense as well as a means of expression.

It is advisable to experiment with a material yourself before you give it to children. Try to see what happens to clay when you dry it for firing; try painting with watercolors; and put a few pieces of wood together using the same saws and hammers you are asking the children to use. No amount of advice can replace your own experience with materials.

Specific Information About Materials

Drawing

1. *Pencils:* Thick, soft lead pencils and thin line felt pens are good to have on the art shelves at all times. A small frozen juice can covered

with bright paper serves well as a pencil holder.

2. *Non-toxic felt pens:* All thicknesses and all colors of felt pens separated into individual units should be a basic material. Be sure to remind children to cover felt pens after use.

3. *Crayons:* In addition to the usual thin and thick crayons, there are oil pastels (sometimes called "Crepas"), which do not smudge as much as pastels and write in vibrant color. There are also watercolor crayons (sometimes called "Payons"), which need to be dipped in water or used on wet paper. The water color crayon has the advantage of covering a large area evenly with color.

4. *Wet chalk:* Use thick, soft chalk in bright colors. Have the child paint over the paper with diluted liquid starch cut to half strength with water, using a wide brush. Move the bowl of starch away and let the child draw with thick chalks on the wet paper. When the paper dries, the starch acts as a fixative, and the chalk does not rub off the paper. Since the starch also dries on the chalk, rub the end of the chalk sticks on a wire mesh screen to clean. (Do the chalk cleaning job yourself because children get carried away and rub too much chalk off.)

Be sure to have paper of different sizes, colors, shapes, and qualities available on an open shelf conveniently near drawing materials.

Painting

Paint thickener and extender

1 cup Bentonite (a clay product which can be purchased at any ceramic supply company)
2 quarts hot water

Add bentonite to the hot water. Mix together in a large, covered container, and let stand two or three days, stirring each day. At first the solution will be lumpy and sticky. By the third day it should be of a smooth consistency, like jelly. You may fill a quart jar 3/4 full of extender, put about 3 tablespoons of dry pigment (tempera) on top and stir. Test paint for brilliance by painting on a piece of paper. Add more pigment if necessary, or more water if not smooth enough. Lighter colors usually need more pigment.

Brush Painting

Paints should be thick and creamy, not drippy. Mix to the consistency of sour cream for brush painting. Provide three to six colors, depending on the experience level of the group. Be generous with paint, and provide clean, clear colors for each session. Save only clear, bright colors to use again. If you want to mix enough paint for a week, store in a covered container. Remember, children enjoy mixing paints, and you can use this as part of the painting activity for them. Set out the necessary materials on a low table and guide the child so that he learns a procedure that results in usable paint. Set out a bowl of bentonite (thinned to the proper consistency) with a large spoon and a tongue depressor in it, several paint cups with a line to show the amount of bentonite the child should put in, several jars of pigment each with its own

teaspoon in it, and the brushes to be used in the paints. Tell the child the procedure one step at a time and *give him time to complete each step before stating the next step.* "Do you want to make a color? Go to the easel and see which color we need." Child selects color. "Put bentonite up to this line. Now put one teaspoon of pigment in the cup and return the spoon to the pigment can. (Two teaspoons needed for light colors like yellow and white.) Then mix with a paint brush." Discuss the consistency of the paint with the child, and add a little water if necessary. The child will quickly learn to do this himself, if the procedure is clearly presented. However, do not leave pigments on the table unsupervised; they are too attractive. Paint mixing needs adult supervision.

Brush painting can be done at the easel, on large pieces of paper tacked up outside on a fence, on large pieces of paper tacked to a table, or on smaller white or colored papers at a table. Varying the paper size and shape, and the brush size adds interest to the activity. Try to cut down possible frustrations by providing a holder for the paint cups so they won't tip. A cardboard bottle carrier or a milk carton with one side cut off make good cup holders.

Color mixing

If a child wants to mix colors to see what the result will be, suggest that he use paints already mixed and not dry pigments. Give him a teaspoon and have him choose 2 colors to mix at first. If he mixes too many at one time, he will not be clear about how the new color came about. He may add other colors to the mixture after he sees what has happened, but urge him to add only one color at a time. Use small paper cups for paint mixing, and suggest that the child use the colors he made in a painting.

Finger painting

Put fingerpaint in small paper cups with a tongue depressor in each cup, and have the child choose only 2 colors at a time. Starting with only the 3 primaries available is a good idea, so that the child can see purple, green, or orange emerge when he mixes two primaries together. Use a formica table surface, oilcloth, or trays for direct painting. A monoprint of the fingerpainting on the tray or table can be made by placing a dry paper over the fingerpainting and rubbing gently with the hands. The monoprint is easier to dry than a fingerpainting made directly on paper, and it gives a more faithful rendering of the fingerpainting experience.

Fingerpaint recipes

Aquatex non-toxic wheat paste

4 cups water

1¼ cups aquatex non-toxic wheat paste

½ cup soap powder

Put water into bowl. Add wheat paste and beat until thick and smooth. Add soap powder and stir. Divide into 3 portions, putting each

portion in a bowl. Add 2-3 tablespoons pigment: make one bowl red, one blue, one yellow. Fill paper cups 2/3 full and put a tongue depressor in each cup.

Bentonite in right consistency also makes excellent fingerpaint.

*Golden Gate Nursery School Recipe**

Take 2 cups of flour and add 2 teaspoons of salt; then pour in 3 cups of cold water gradually and beat the mixture with an egg beater until smooth (make a paste of flour and water to remove lumpiness). Add 2 cups of hot water and boil mixture until it becomes clear, stirring constantly. Beat until smooth, and then mix in bakers' food dye coloring. Use ¼ cup to 8 ounces of coloring depending on strength of dye.

Liquid starch

Pour directly on paper and sprinkle poster paint powder on for color. You may use small amounts of bakers' dye instead, from small squeeze bottles.

Buttermilk recipe

Wet paper with buttermilk and sprinkle with dry tempera colors. Finished product will have lustre.

Watercolor painting

Remove all paint pans from the watercolor box except the 3 primaries (red, blue, yellow). Give each child a paintbox, small rag to dry brush, small dish of water, and larger bowl of water. Show child how to wash brush in big bath, dry brush on cloth, then get fresh water from small pan to make a new color. After about 2 days add orange paint pan, next day, purple, and so on. By simplifying the activity the first 2 days, the child finds it easier to learn the procedure. He also discovers how to mix orange, purple, and green from the primary colors.

Modeling sculpture

Potter's clay

Clay for young children should be as soft as possible without being sticky. It is the water that makes it soft, and with exposure to air and hands it dries and hardens.

To store clay: Keep it in a plastic bag closed with a rubber band, and place this in a heavy container, e.g., a garbage pail with a lid. Check it from time to time to see that it is airtight, and not losing moisture. If mold grows on the clay, sponge it off, and return it to storage.

When working with clay: Show the child how to cut clay with a wire so he can get clay for himself. A covering of heavy canvas over the table makes a good working surface. Let children have as much clay as they feel they need to work with.

Some ways to remoisten clay that has become dry:

1. Flatten it out to about 1½ inches thick by pounding it with the

*Taken from "The How of Successful Fingerpainting" by Rhoda Kellogg.

hand or a stick.

2. Poke holes in it, making holes close together with the thumb.
3. Fill the holes with water.
4. Place plastic or wax paper over surface.
5. Let sit for 2-6 hours; the drier the clay, the longer it should sit to soak up the water.
6. Pour off excess water.
7. Knead on plaster board into convenient balls and to remove excess air bubbles. Knead in such a way that clay is *not* folded over on itself, because that traps more air inside the clay. (A plaster board can be made by pouring plaster of paris into a greased cookie or large cake tin.)

If clay is too moist: Knead it on a plaster board for a few minutes. If it is sloshy, spread it out on the plaster board until the underside is dry enough that the clay can be lifted as one slab from the board (5 minutes to 1½ hours depending on clay consistency), and then turn the clay over, and leave it about 3-4 minutes with the moist side down. Knead it into balls.

If clay is dry and rock hard: Have children break the hard clay into small chunks with a hammer, using a large nail or a screw driver as a wedge. Put chunks into a basin, and cover with water. When clay is soupy, remove to plaster bat board and let it dry until moist. Follow directions above for overly moist clay.

Hints about firing children's clay work:

If at all possible, any clay work that a child selects for preservation should be fired. By firing the child's clay work, he gains experience in watching the change of state in clay from soft to hard. Also, he is encouraged to value his own work because the important adults in his life have chosen to preserve it. Firing clay usually stimulates children's productivity with clay.

a) All clay work to be fired will need to be dried slowly and thoroughly. Set aside a shelf area for drying, and cover the whole shelf with a damp cloth. Move clay work as few times as possible, since it is very fragile until fired. Putting a clay piece directly on a cardboard helps to keep it safe when it has to be moved.

b) If you need to hollow out clay pieces to save clay, wait until the piece is leather hard and can be handled without distorting. Use a teaspoon to hollow out excess clay.

c) Clay needs to be thoroughly dry before firing, or it may explode during firing. Pieces will take varying amounts of time to dry according to the thickness of the piece and the drying condition. When a piece is no longer cold or damp to the touch and when it has changed color to the dry color of the clay, it is ready to fire.

d) Find out the firing temperature of the clay you are using, and have a person who is experienced in using the kiln take you through at least one firing. Fire for the first day at a low temperature to further dry

out the clay. Fire the second day at medium temperature and raise slowly to the full firing temperature on the third day. Slow buildup of heat tends to prevent explosion of the clay in the kiln.

e) Very thin, flat pieces often cannot go through a firing. To preserve such pieces, paint a coat of white glue on a piece of masonite, place the clay piece on masonite, and paint over the piece with white glue. Apply a second coat when dry.

Salt-flour dough (play-dough)

Recipe: 2 cups flour
1 cup salt
1 teaspoon powder pigment
¾ cup water
a few drops of salad oil

Mix flour and salt together, add color, and gradually add the water (with oil in it) to form a pliable dough. Store dough in a plastic bag. It can be used like clay, and finished products may be hardened in a slow oven (250°) for three hours or more, depending on thickness. It is preferable to let the child shape things only with his hands. Sticks, cookie cutters, and rollers are not necessary, and they tend to reduce the activity to a mechanical, imitative one.

Sawdust modeling mixture

Mix 1 cup sawdust with ¼ cup wallpaper paste. Add enough water to make mixture like soft putty. Dries hard like wood.

Construction sculpture

Wood scrap sculpture

Scraps of hardwood can be obtained from cabinet and furniture making shops. Use a small container of white glue to stick objects together. Always keep the wood pieces predominant so that the products will remain three-dimensional sculptures, like block buildings, and not flatten out like collage. Avoid presenting a large piece of wood as a base because that also suggests collage rather than three-dimensional construction. After the child has done wood scrap sculpture for a long time, corks, pods from trees, tongue depressors, pebbles, tiles, etc., can *occasionally* be added for variety.

It is not advisable to suggest the painting of wood scrap sculpture because the scraps themselves have subtle variations in wood color and grain which children should learn to appreciate.

Paper box sculpture

Save all sturdy, attractive small-to-medium sized paper boxes, paper towel rolls, etc. Unattractive boxes should be painted over with a bright color. Present with glue as a sculpture material.

Styrofoam sculpture

Scrap styrofoam pieces are often available from companies where they have been used as packing materials. Large pieces can be cut up with a band saw, smaller pieces can be used directly. Toothpicks will hold styrofoam pieces together to make constructions.

Carpentry

Wood should be soft, such as soft pine, with grain running the length of the piece to avoid splitting. Pop bottle caps, rug pieces, rubber bands, and sturdy metal and plastic bottle caps make good nailing additions. C clamps are very useful to hold the wood for drilling and sawing. Nails of various lengths and thickness are needed for different hammering jobs. Care should be taken that the hammers and saws given to young children really work, because there is more danger in trying to force ineffective tools to work than in using sensible tools: hammers should be heavy enough, saws sharp. The old fashioned brace and bit seems more effective than the newer drills, for use by young children.

It should not be suggested that carpentry pieces be painted, because this surface treatment obliterates the subtle differences of woods and grains. Instead, sand paper blocks can be used to smooth the wood, and some linseed oil can be rubbed over the surface to bring out the grain. When children start to construct more elaborate pieces, hinges, screws, and small screw drivers add a welcome challenge to the carpentry corner.

Building houses from cardboard panels

Cardboard crates reinforced with wood can be obtained from some appliance stores. Break crates apart and pull out nails. Children can build large houses, garages, etc., easily by nailing panels on wood reinforcement. Painting the houses, wallpapering the walls, making windows, doors, furniture, shades, curtains, etc. are all possible extensions of house building. (This activity takes a lot of space and is impractical in some settings.)

Metal sculpture

Pliable metal scraps can often be collected from sheetmetal firms. Flexible copper clad wire can also be bought at hardware stores to make twisted wire sculpture. Children should wear gloves when working with sharp-edged metal.

Collage

Collage materials should be presented in an organized variety. Materials can be kept separated in boxes according to the tactile properties of the materials: a box of rough materials, smooth materials, soft and hard materials, etc. could be gathered and kept available for children to add to from their own homes. Strong backing for collage, such as cardboard or small wood pieces, should be available on the shelf near the collage materials. A TV tray serves well as a collection tray when a child wants to select materials from the storage boxes. With young children the size of the backing material tends to influence the closeness of the design: a small size encourages clear spacing, a large size encourages sparser use of the area.

Sand-casting

This activity can be done at the seashore during a field trip, in

school after the children have gathered materials at the seashore, or during a walk in a natural wooded area.

Give each child his own TV tray full of shells, small driftwood pieces, pebbles, cones from trees, and other found objects. Have the child scrape a shallow hole or clearing in the sandbox with his hand. Dampen sand with fine spray of hose or by dripping water on by hand. To help the child learn that he has to look at and select each object before placing it, have the child select an object, then ask him "Which side is prettier?" When he selects the prettier side, say: "Put the prettier side down in the sand." When the child has arranged all the objects he selected in the clearing, make sure all the objects are free of sand so that the plaster of paris will stick to them. The child helps the teacher mix plaster of paris in a paper container (so that the container can be discarded and does not have to be washed), and then pours it over his assemblage. Put a small piece of paper with the name of it on top of the wet plaster. A hanging loop made of string or wire can be pressed into the wet plaster. To mix plaster of paris: sift plaster of paris into as much water as you think you want of plaster. Sift plaster in until it stands in a peak in center of container. Stir with hand or spoon. Plaster will turn warm as it starts to harden. This is a warning to work quickly. Plaster of paris mixed to the consistency of sour cream hardens very quickly. When the poured plaster is hard, have the child help you remove the cast and brush off excess sand to reveal the objects he selected and put face down in the sand.

Mosaic

The making of a large composition of mosaic tile or other materials should be introduced gradually to young children. One should first show examples of mosaic work and point out any tile work in the school. Often kitchens, bathrooms, or floors are made of small pieces of tile or wood fitted together to cover a large area. As a first stage of work by children, small rectangles of black paper (about 3" x 4") could be presented with 1" squares and triangles of different colors. The small size of the paper will encourage the child to try many patterns. The teacher can draw attention to the many different patterns being created. On the second day of the project, different shapes of backing paper can be introduced: octagon, circle, and square. Putting all the children's mosaic patterns up on the board is impressive and stimulating. On the third day, linoleum squares, rug pieces, or other thick materials could be introduced with glue and wood backing. This gives the children a chance to master the technical problem of using glue on small surfaces. By the fourth day, interest should be high, and tiles can be introduced. Be sure to have a variety of colors, shapes, and sizes of tile and present only small backing boards. Encourage the children to put their work away and continue the next day if they get tired. Further variations of mosaic are to use broken tile in odd shapes, to combine a variety of materials such as shells and pebbles with tiles, and to work

with a group on a larger surface to be used as a table top in the school.

Stringing

There are many materials used as packing which make durable and attractive objects to string. Chopped drinking straws and small bits of styrofoam can be obtained free, in quantity, and are preferable to colored macaroni for stringing because they will not break – or get eaten as macaroni often does. Thin sections of cork, wooden beads, and bits of thin plastic hose add variety to a stringing activity. If the children have been working with salt-flour dough, they may want to make beads out of dough and bake them. Puncture a hole in the beads with a greased toothpick and leave toothpick inside while baking.

Thin, coated wire, like telephone wire, is excellent to use for stringing. Later, needles and yarn might be introduced.

Stitchery

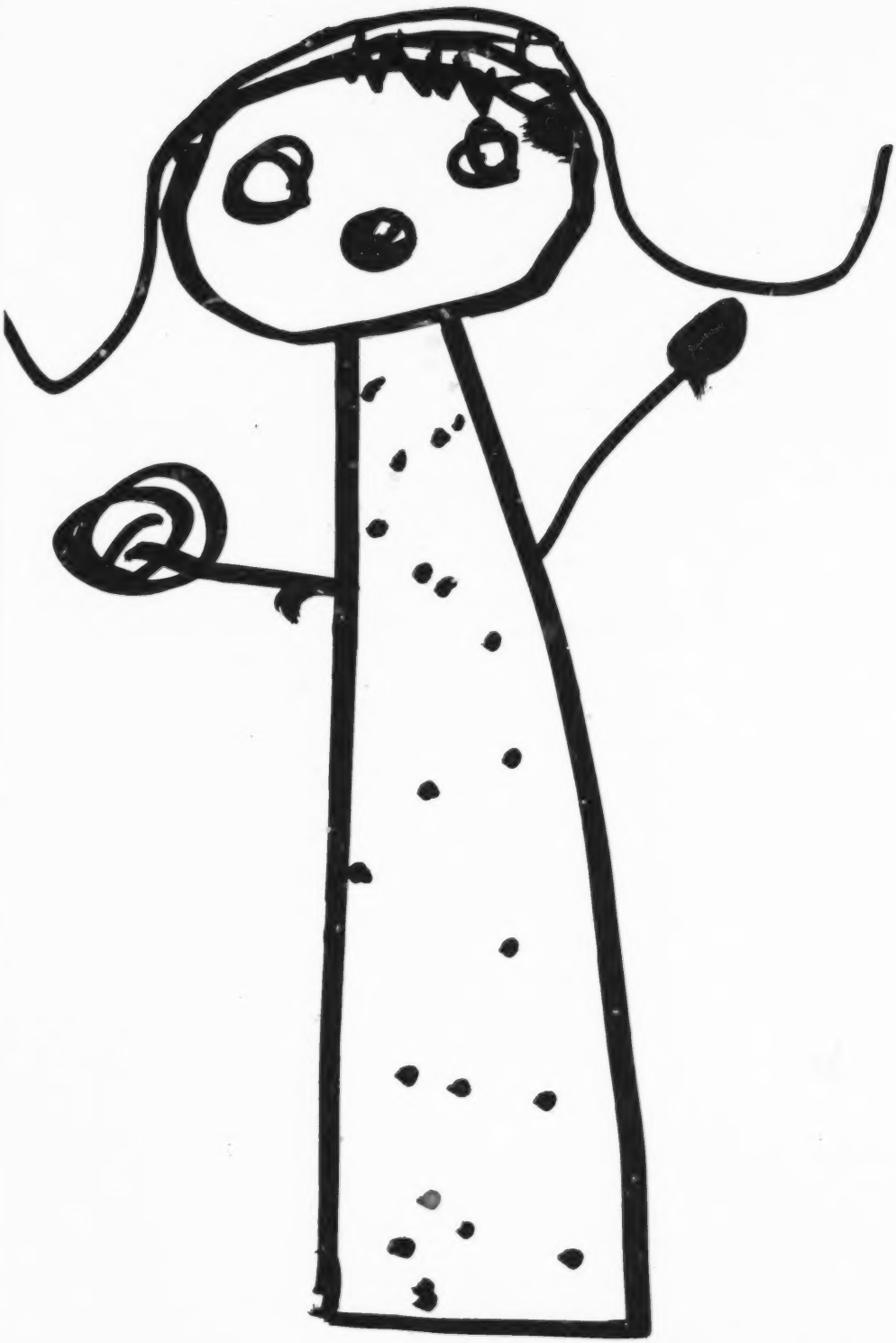
Stitchery is a challenging activity for the older preschool child. Much adult help is needed at first for the four- or five-year-old, but it is a challenge to learn front from back and to keep from sewing the frame or hoop onto the frabic. A sewing frame can easily be made from thin pieces of wood tacked together in a square approximately 10" x 12" in size. Colored burlap can be tacked onto the wooden frame, and the child can use bright colored yarn with large needles for his first sewing. As the child becomes more adept at placing stitches, a round hoop can be used. Small pieces of colored and patterned cloth, buttons, and beads should be added to encourage rich stitchery patterns to develop. A group stitchery effort on a large piece of burlap or a coffee sack can result in a colorful wall hanging for the school.

Printmaking

Printmaking permits the introduction of a new concept. To introduce the technique, gather various objects and present them to the children with paint for printing. A thin coating of paint on the bottom of an aluminum foil baking tin serves nicely as a printing pad for object printing. Use paper no larger than 9" x 12" for printing, to encourage relating of the print marks. Cookie cutters, spools, seed pods from trees – almost anything prints. Following this project children might do vegetable prints by cutting a cucumber, carrot, or potato into halves or other shapes and combining these, overlapping the print marks on paper. As a further printmaking project children can make their stamps by gluing yarn, bits of felt, and other materials onto a wooden block. Take care to present only materials of the same thickness so they all will print. When the stamp is finished, children can paint the raised areas with various colors and press the stamp down on paper to make a print. The stamp and the print can be mounted side by side when the printing is finished.

Sources for Free and Inexpensive Salvage Materials

Assorted ends of paper: printing and lithography shops; roll ends of



newsprint: newspaper press

Crates and boxes: Import firms, mortuaries, piano companies, van and storage companies, army depots

Dramatic play props: Furniture can be cut down for doll house play, hats, dresses, fur pieces, purses, vests, ties, bicycle pumps: Salvage stores

Hardwood scraps for gluing: Furniture making shops, tool and die companies

Large sheets of paper, blank on one side: rejected billboard paper from billboard printing press

Leather scraps for collage, carpentry: Glove and jacket manufacturers

Lightweight, fragrant, cedar blocks (sometimes sold as firewood), rejected pencil blocks make good building blocks: Supermarkets

Plastic bottles for glue, water: Beauty shops

Plastic ponchos (make excellent apron material): Army surplus stores

Sandbox equipment (spoons, muffin tins, pots, pitchers, etc.): Salvage stores; plastic bleach bottles can be cut into sandbox scoops (leave handles on)

Silverware and utensil boxes, trays (useful for storage and presenting materials): Salvage stores

Tile and linoleum scraps: Tile setters and linoleum stores

Trench digger shovels, canteens, goggles, instrument panels, tarps: Army surplus stores

Wallpaper ends and sample books for collage and papering houses made from panels: Paint and decorator shops

FILMS FOR CHILDREN

1. *A Day at the Calgary Zoo* (Tour of Calgary's St. George's Island zoological gardens), NFBC, Suite 819, 680 5th Ave., New York, N.Y. 10019.
2. *Big People—Little People* (Little people run a city until they find they'd rather play and get big people to run it), Sterling Educational Films, 241 E. 34th St., New York, N.Y. 10016.
3. *Curious George Rides a Bike* (Uses illustrations from the book), Weston Woods, Weston, Conn. 06880.
4. *Curl Up Small* (Taken from the book by S. S. Warburg), Sterling Films, 241 E. 34th St., New York, N.Y. 10016.
5. *Harold and the Purple Crayon* (Harold uses a purple crayon to draw himself and his adventures—uses the book illustrations), Weston Woods, Weston, Conn. 06880.
6. *If I Were an Animal* (Animals as seen through the eyes of children), Three Prong Television Productions, 1525 East 53rd St., Chicago, Illinois 60615.
7. *Make Way for Ducklings* (Mr. & Mrs. Mallard raise a family—uses book illustrations), Weston Woods, Weston, Conn. 06880.
8. *Mike Mulligan and His Steam Shovel* (The story of an old steam shovel—uses the book illustrations), Weston Woods, Weston, Conn. 06880.
9. *Millions of Cats* (An old man and his wife adopt millions of cats—uses the book illustrations), Weston Woods, Weston, Conn. 06880.
10. *Nick* (A jungle boy's devotion to a baby elephant), Walt Disney films, 800 Sonora Avenue, Glendale, Calif. 91201.

11. *Sit Down* (Movement in games and activities), Three Prong Television Productions, 1525 East 53rd St., Chicago, Illinois 60615.
12. *Someday* (Children express their ideas about a visit to the zoo in dance), Sterling Educational Films, 241 E. 34th St., New York, N.Y. 10016.
13. *The Little Mariner* (The dreams and ambitions of a small boy sailing his small boat in Long Beach Harbor), Encyclopedia Britannica Educational Corp., 425 N. Michigan Avenue, Chicago, Ill. 60611.
14. *The Red Balloon* (French film showing a small boy who befriends a stray balloon), Brandon Films, 221 W. 57th St., New York, N.Y. 10019.
15. *The Shape and Color Game* (Shapes and colors incorporated in a delightful dance–like hide and seek game), Sterling Educational Films, 241 E. 34th St., New York, N.Y. 10016.
16. *The Snowy Day* (Wonders of a city snow–uses the book illustrations), Weston Woods, Weston, Conn. 06880.
17. *The Toymaker* (The rivalry of two hand puppets in a toy shop), Contemporary Films, 267 W. 25th St., New York, N.Y. 10011.
18. *Three Little Bruins*, Part I, II, & III (Concealed camera shots of bears in a canoe, in the woods, and on a spree), Frank Church Films, 6117 Grove St., Oakland, Calif.
19. *Water is Wet* (An explanation of wetness), Three Prong Television Productions, 1525 East 53rd St., Chicago, Illinois 60615.
20. *Where Does My Streetcar Go* (The magic of a city), Three Prong Television Productions, 1525 East 53rd St., Chicago, Illinois 60615.
21. *Whistle for Willie* (A little boy learns how to whistle for his dog–uses the book illustrations), Weston Woods, Weston, Conn. 06880.

REFERENCES

[1] Andrews, Michael F., *Creative Printmaking*. Englewood Cliffs, New Jersey: Prentice-Hall, 1964. (Variety of printing techniques some of which are suitable for use with four to six year olds.)

[2] Bland, Jane C., *Art of the Young Child*. Greenwich, Conn: New York Graphic Society, 1968. (Practical suggestion for a variety of age-appropriate art activities for preschoolers.)

[3] D'Amico, Victor, et. al., *Art for the Family*. Garden City, New York: Doubleday and Co., Inc., 1954. (Description of a variety of media and activities suitable for school and home use.)

[4] Gregg, Elizabeth, et. al., *What to do "When There's Nothing to Do."* New York: Delacorte Press, 1968. (Practical suggestions for age-appropriate activities from early infancy through kindergarten; useful for parents and teachers.)

[5] Hendrickson, Edwin A., *Mosaics, Hobby and Art*. New York, N.Y.: Hill and Wang, 1957. (Practical suggestions for applying mosaic tile, but many of the activities suggested are beyond preschoolers abilities.)

[6] Marshall, Sybil, *An Experiment in Education*, Cambridge, Mass: Cambridge University, 1966. (Description of a teacher's successful use of creative art as the core of a curriculum with English rural children.)

[7] Moffitt, Mary W., *Woodworking for Children*. New York: Early Childhood Education Council of N.Y. (Practical suggestions for carpentry work with preschool children.)

[8] Petterson, Henry, *Creating Forms in Clay*, New York: Reinhold, 1968. (Describes various methods of working with clay; can be used to extend your own experience.)

[9] Pitcher, Lasher E. G., et. al., *Helping Young Children Learn*, Columbus, Ohio: Chas. Merrill Books, 1966. (Manual describing various activities, including art, which parents and teachers can use to help children develop skills.)

[10] Rhodes, Daniel, *Kilns: Design, Construction, and Firing*, Philadelphia: Chilton, 1968. (Practical suggestions to extend your experiences with clay firing.)

[11] Rosenberg, Lilli Ann, *Children Make Murals and Sculpture*. New York: Reinhold,

1968. [Describes children using tile and other materials to create murals.]

[12] Shoemaker, Rowena, *All In Play: Adventures in Learning*. New York: Play Schools Assoc., 1958. [Variety of activities for young children which can be offered at home or at school.]

FILMS ABOUT CHILD ART

Catch a Tiger [Music and art in preschool; black and white, 30 min.], Catch a Tiger Co., 11 River Lane, Millburn, New Jersey 07041.

Children Who Draw [Child art in Japan; color, 44 min.], Western Cinema Guild, 244 Kearny, San Francisco, California 94108.

Early Expressionists [Illustrates origins of art in 2-4 year olds; color, 20 min.], University of California Extension Media Center, 2223 Fulton St., Berkeley, California 94720.

My Art is Me [Shows preschoolers using a wide variety of art materials; color, 22 min.], University of California Extension Media Center, 2223 Fulton St., Berkeley, California 94720.

My Own Backyard to Play In [Children playing in the slums of New York; black and white, 10 min.], Contemporary Films, Inc., McGraw-Hill Book Co., 330 West 42nd St., New York, N.Y. 10036.

Thelma Harms writes with practical insight born of rich experience with preprimary education. At present she is head teacher at the Harold E. Jones Child Study Center Nursery School at the University of California at Berkeley, an instructor in early childhood education at the University's Extension Division, and a Ph.D. candidate at the University, specializing in curriculum for early childhood education. Mrs. Harms is a frequent contributor to professional journals and a consultant to private and public schools. At present she is helping public schools reorganize classroom environments to facilitate activity learning with art as the core of the curriculum. She is the author of *Discipline—A Positive Approach*, and has written numerous articles on topics such as nursery school administration, children's play, parent participation in the nursery school program, and evaluating settings for learning. Her film "My Art is Me" won a Golden Eagle in 1970.

EARLY EDUCATION IN THE VISUAL ARTS

STANLEY S. MADEJA

In the article that follows Stanley Madeja presents three contrasting models of early education programs. Two of the programs are in operation; the third is proposed. The visual arts play an important role in all the programs but are used differently in each. In the Syracuse University program the two developmental levels in preprimary drawing, presymbolic and symbolic, provide a basis for grouping for instructional purposes. In the University City program, art is treated as a means of promoting perceptual development, which in turn contributes to other aspects of development, categorized as motor, visual, cognitive, and auditory-language. In the theoretical model the visual arts are viewed as a field of study. The program is designed to increase sensitivity to the visual arts, although it is likely to contribute significantly to cognitive development as well.

The Syracuse University model is an exemplar of a child-centered approach to early childhood education. As such, it shares in the general acceptance long accorded to this approach. It relies on the wisdom of the child to select from among a wide variety of available activities those which best suit his needs. By exercising choice the child determines his own curriculum. The teacher sets the stage and offers support, but not direction. Although attention is given to all aspects of development, the overriding objective of the Syracuse University program is the development of creative power.

In the University City program the teacher intervenes in order to insure that the child's developmental profile is not jagged. Instruction is provided to remedy deficiencies in motor, auditory-language, cognitive, and visual development. Behind this approach lies the notion of the "norm" as a minimum standard for all children. A diagnosis of individual needs, provides the basis for curriculum decision. Although

there is attention to social and emotional growth, the emphasis is on the cognitive. The program reflects current experimentation with formal instruction in the preschool. The theoretical model preposes a structure for the visual arts – a continuum consisting of five hierarchically ordered components: observation, description of visual relationships, selectivity, generalization of form, and abstraction. Behaviors are to be generated for each of the components and appropriate desired activities planned in connection with the desired behaviors. The sequence of learning activities would be based on a cycling of the components. Cycles are flexibly interpreted, previous learnings are to be reinforced and maintained throughout the cycling and components may be overlapped or combined.

The theoretical model departs from traditional practice. The focus of attention in the proposed program is one responding to visual art rather than creating it. The theoretical model is "subject-centered" rather than "child-centered"; it procedes from an analysis of the field, accommodating to the child's natural model of learning by using play materials to develop perceptual skills. The program would be teacher-directed. Teachers in turn would be directed by the plans of curriculum developers.

Dr. Madeja proposes a novel and sophisticated model for early instruction in the visual arts. It assumes a correspondence between the hierarchical ordering of perceptual skills and the way in which young children learn. Whether the two processes share the same logic is yet to be determined. It may be that for young children the wave is a better metaphor for learning than the staircase.

Dr. Madeja assumes that direct instruction is more effective in teaching young children than incidental learning through play. When the program is in operation it will be desirable to assess the permanence and transferability of learning under his model and compare, in more comprehensive terms the outcomes of varying programs.

The theoretical model is unique in its field in that it presents the work of many scholars in a novel juxtaposition. It is an imaginative approach to curriculum development. Its true value, however, can only be determined in practice. Hopefully the proposed program will soon be in operation and its contribution made evident.

INTRODUCTION

Programs at the preschool level have not been characterized by unique organizational structures. In comparing programs there are few differences which exist in the field as to the organization and sequence of content of early childhood programs. Resnick [1] suggested that:

> *. . . there has been astonishingly little systematic attention to the question of what the content of that education ought to be. There is plenty of debate over whether young children should be offered conceptually oriented formal instruction of any kind, and whether the classroom organization should be free and expressive or structured and directed. Yet with few exceptions, even those committed to early conceptual instruction offer no clear specification of curricula or rationale for curricular choices.*

The debate has also revolved around classroom teaching strategies which tend to range from experientially based instructional approaches, such as a progressive nursery school program, to a highly structured almost programmed sequence of learning experiences.

This paper will not resolve the debate but will pose some exemplary models and present a middle ground alternative for the organization of early education programs in the visual arts. Two of the programs described are operational and existing in school settings. The third program is outlined as a theoretical model which structures the visual arts component of an early education program. This model could be termed a middle ground in that it draws upon stimulus-response psychology for the development of skills, and Gestalt psychology for the formation of visual concepts. Each of these exemplary programs has a different structure and provides the curriculum developer with alternatives for the selection of content, student activities, and teaching strategies.

Two Exemplary Programs

The programs reported herein are representative models in early childhood education. The first program, directed by Professor Michael F. Andrews [2] and located at Syracuse University's Center for Research and Development in Early Childhood Education, exemplifies an organizational structure with its base in the visual arts and developmental psychology. The objective of the program is to

> *help the child to develop the ability within himself from which he creates. All other objectives; the acquisition of knowledge, development of skills and techniques, experimentation with materials, communication of feelings and ideas, productivity, appreciation, and the like must respect this basic objective, stem from it and contribute to it.*

The children enrolled in the program are at the prekindergarten level.

The model utilizes developmental psychology as a theoretical base for organizing student activities. Instructional units are grouped around two natural developmental stages of aesthetic activities, the presymbolic or heuristic, and the symbolic stage.[3] The emphasis in the teaching strategies is placed on student self-involvement and discovery. Children who are personally involved, in terms of their innate tendencies and potentialities show a willingness to persevere with even tedious and difficult adventures. The basis of selection of sensory art activities is their relevancy to the individual and his personal environment. The child selects the direction of instruction as the relationship of teacher to student is a supportive one rather than directive. Andrews[4] states that:

> *At the presymbolic level of development learning units may be based solely on primordial experiences. The children should be exposed to a number of manipulative materials in a conducive, comfortable environment and encouraged to interact with the art materials . . . The level of artistic development (presymbolic) should be considered psychologically by itself and in relation to the next steps. The student should be provided with appropriate materials and encouraged in activities which will consider the basic interests, and develop the natural capacities of the child at this age. Instinctively the child knows his own way.*

The activities at this level are manipulative ones for the child which involve a variety of two- and three-dimensional media. Because the activities are intentionally nondirective, the student is encouraged to make his own decisions with regard to his degree of involvement.

The next level of instructional activities is grouped around the symbolic stage which is characterized by the child's perceptions. At this stage it is important that children incorporate their own imagery and impressions of what may be termed aesthetic, rather than to work for a precise photographic image. During this period the child controls the ideation so that individual creative growth can be developed throughout informal instructional activities. Andrews emphasizes that only after presymbolic experiences will the children really be ready to indulge in symbolic experiences. He also stresses the importance of not dictating adult forms to children but encouraging them to perceive, discover, and express what the objects look like and what they mean.

Teaching strategies encourage open-ended problem solving rather than the development of skills. The units are grouped around such familiar topics as the family, animals, birds, insects, trees, and the like. A sample unit of learning as described by Andrews[5] is as follows:

> *An increase in sound awareness and sensitivity can be experienced in many ways. For example, we could read Helen Borten's book "Do You Hear What I Hear" to young children. It reveals the variety of sounds that surround us. We might*

ask the children to listen to the sounds and to identify them, to imitate them, and to describe them as to whether they are loud, quiet, pleasing, exciting, cheerful or frightening. And, oh yes, whether they are long or short, blue, red or yellow, rough or smooth. We could encourage them to create their own sounds (music and noise), to relate sound to its sources, to create visual relations to abstract sounds. We could even expose the children to a particular sound on a tape recorder giving the sound a greater range of dimension and new meanings by slowing and speeding the sound, and changing the volume and the balance tone (bass and treble). We may expose the children to sound with and without its visual counterpart (the slide of a lion with a sound of a roar). The visual relevance may be a movie film as well as "stills," projected on a small ground as well as a large screen, superimposed upon another lion image, projected upside down, et cetera. We may even try to have the children develop awareness and sensitivity through empathy by having the children be the source of identified sounds and the sounds of their own creation.

The program at Syracuse is exemplary of many programs which are based upon developmental psychology. The justification for this heuristic approach is the premise that at the age of four, aesthetic and perceptual learning are most important. These programs are exciting to observe in operation, and this one in particular has proven its effectiveness by standing the test of time and the scrutiny of the educational community.

The second program is not based upon the visual arts, but uses art as the central activity to provide perceptual growth. The curriculum is based upon a continuum of developmental skills from basic to high intellectual growth and also includes the usual nursery school activities which are thought to foster social and emotional maturation. Each day for a period of approximately twenty minutes the group receives instruction in one of the activity areas such as: motor activities, auditory-language activities, or visual activities. The objectives of the program are to: 1) foster and increase intellectual development of prekindergarten and kindergarten children through a personalized program based on assessments of each child's developmental skills; 2) develop a guide concerning all facets of the project including test selection, administration, evaluation, and interpretation of the program; and 3) develop instructional materials which will make the teaching of developmental skills more effective.

The program, now in its fifth year, was developed under a grant from the U. S. Office of Education,[6] and involves four-year-old prekindergarten children in the University City, Missouri, School District under the direction of Alice Kaufmann. The operation programmed in Phase I was a prekindergarten experiment lasting one year and a kin-

dergarten field testing which extended for that first year. Phase II was a repetition of the first year prekindergarten experiment and a field testing of the findings of Phase I. The third year was a followup study of those students in the second and third years of the program and also a repetition again on the Phase II. The program began in September of 1966 when 277 four-year olds were given a battery of tests to measure five developmental skills: motor, auditory, visual, cognitive, and language. From this test group 100 children were randomly selected to make up the experimental group which attended one-half day prekindergarten sessions. The children were divided into classes which were formed around the test criteria; a motor class, an auditory-language class, a visual class, and a cognitive class.

A profile (Figure 1) was developed for each student which indicated graphically their performance on the criterion measures, and this became the method for grouping. The model was based upon the work of Osgood [7] and incorporated the elements needed for interpersonal communications. The model has since been modified by Bateman [8] and by the project leaders, as attempts have been made to fit as many learning components as possible into the original format. The modified model contains three dimensions: 1) the channel or input-output system through which information is received and conveyed, 2) the ways in which information is processed, and 3) the level of meaningfulness of content, as well as the child's capacity for handling increasing amounts of information of increasing complexity.

With the profiles providing the criteria for grouping, instruction centered around deficiencies in four centers of attention: motor, auditory-language, cognitive, and visual. For each center of attention, a series of booklets [9] was developed outlining instructional activities which could be used by the teachers and teachers' aids. These became guidelines for determining instructional activities during the 20 minute work sessions of each day. Included in each booklet was a list of appropriate instructional materials, explanation of general areas covered related to the characteristics and problems of children, and the expected outcomes of instruction. The parents were brought into the program in a way which was unique. Packets of materials were developed as take-home packages for each of the developmental areas, and a student having difficulty was reinforced by parent training in a home environment. The program received a broad base of parent support because they were so intimately involved.

There were three principle methods of determining which children needed what kind of activities: diagnostic tests, activity inventory sheets, and teacher observations. The diagnostic tests provided a profile of the relative strengths and weaknesses of each child and indicated how far he had progressed in his development when compared to others of the same age. By studying these profiles the teacher could give special attention to areas in which the child did not come up to the median level. Once the difficulties were diagnosed, a check list of activities or

accomplishments were designed in each of the learning areas to remedy the child's deficiency. Other check lists were made up to include any specific skills that the teacher wished to emphasize during a month, a semester, or any other period of time. The check lists became a record of the child's performance and were kept in a cumulative folder which the teacher constantly referred to in planning activities for the individual child and in grouping children for further activities. The teacher's reactions and her impression of the child were also used in evaluation and became a part of the permanent record. The process of selecting content and determining teaching strategies for instruction was facilitated by using the criteria. The process of selection was an on-going one which by its structure was adaptive and maturable and individualized the instructional program by using set but flexible criteria.

An extension of the Early Education Program was an Experimental Kindergarten which is a joint project between CEMREL, Inc. and the Arts in General Education Project of the JDR 3rd Fund.[10] The kindergarten was in operation for a two-year period from the fall of 1969 to the spring of 1971.

The expected outcomes of the project were:

1. To extend the early education model to include a creativity factor in the student profile.
2. To design arts activities which help to develop creative and perceptual skills and aesthetic learnings.
3. To design an environment for learning which was condusive to general perceptual learning and aesthetic education in which the student can participate and make choices about the instructional process, and which satisfy basic skill requirements for entry into the first grade.
4. To introduce the student to a learning situation where he has *equal* responsibility with the teacher for instruction and has to maintain a working relationship with his peers in order to participate in the classroom activities.

The Experimental Kindergarten is philosophically based on the British Infant School model. As Joseph Featherstone comments, these schools seem to be able to deal with "very small children who are insistently individual and difficult to herd around."

The environment the children worked in presented tools for the arts and learning. Exploration and experimentation are often termed play; the British, however, have found that play is, for the young child, his work. The teachers in the kindergarten watched the children, talked to them about what they are doing and asked questions designed to widen the scope of learning.

The child makes choices in the use of time as well as in the use of

materials. He is allowed to spend long stretches of time undisturbed as he investigates the possibilities of a certain material or place; or he can move quickly from one activity to another.

In developing the learning setting of the Experimental Kindergarten, the aesthetic component of the environment was stressed. An attempt was made to introduce a wide variety of activities and materials in art, drama, movement, and music as integral parts of the total program. Children were encouraged to delve deeply into these areas through the formal developmental skills training and through free experimentation over their whole year in the kindergarten. The program has been in operation for a two-year period and at the time of this writing the final report was in preparation.

The most outstanding characteristic of the models were that art activities were used in each of the groups as part of the total instruction program. One emphasis was in structuring the art activities according to defined criteria based on individual assessment of the child's strengths and weaknesses. Although students in the visual group received more art and art related activities than the motor group, all devoted a substantial amount of time to drawing, painting, construction, and sculpture. Visits to the art museum were used to increase perceptual awareness by developing ways of looking at and responding to an art object.

A Theoretical Model

In reviewing programs for early childhood education it is quickly evident that a curriculum developer in art education who is interested in implementing a program does not have a galaxy of conceptual models to draw upon. The existing literature in art education is devoted primarily to studies of children's art, usually drawing. Harris,[11] Lark-Horovitz, Lewis, Luca,[12] and Eisner,[13] to mention a few, have reviewed the extent of this research, and little if any attention is given to the problem of an art curriculum at this level. The basis for most curriculum structures in art has been on two parameters: one, the media or materials used; and second, the developmental levels of drawing. Lark-Horovitz, Lewis, Luca, and Andrews, as well as Lowenfeld have used this as a basis for organizing and sequencing art activities for the young child. The necessity for additional models for organizing an early childhood program in the visual arts along guidelines other than the media used by developmental psychology seems appropriate. The purpose of the last part of this paper is to outline a possible alternative model.

The basis for the model consists of a group of behaviors aligned on a continuum from simple to complex. The continuum, with a provision for continual cycling at different grade levels, is divided into five major components for visual learning. The components, which are chronologically arranged according to the sequence the students move through, now become the method for linking or arranging expected behaviors into learning sequences for the child; however, there

is no distinct line of separation between each of the components. The behaviors could be used individually or in combinations to form learning activities for given segments of time (Figure 2). Trying to order behaviors on a continuum provides the curriculum developer with a method for selecting content. An assumption is being made that if the behavior of the student can be categorized precisely, it can then be described in instructional outcomes and further delineated by student activities. The cyclical continuum provides reinforcement and expansion of each of the components and should reoccur during the student's movement through the entire curriculum. Bruner[14] states this organizational principle in describing readiness for learning.

> *A curriculum should be organized with an emphasis upon intuitive groups of ideas and upon the use of basic ideas, . . .*

and these can be organized into a continuum. Further,

> *. . . a curriculum as it develops should revisit these basic ideas repeatedly, building upon them until the student has grasped the full formal apparatus that goes with them . . .*

hence the recycling of the continuum throughout the visual arts curriculum. The recycling pattern is mentioned here because the model proposed for early childhood education in art will become an integral part of the art instruction after the preprimary program.

The continuum's components are ordered according to what I project as a theory of visual learning. To better understand the components and their structure a descriptive definition and a rationale is necessary. The components are: observation, description of visual relationships, selectivity, generalization of form, and abstraction.

Observation: If acute visual sensitivity is to be an outcome of art education in early childhood, then one of the major skills developed by the child will have to be observation. The term observation is difficult to explain in its entirety as it eludes to many types of levels of understanding. Some may observe phenomena but not analyze its visual content, or may see parts of the whole but never the total object, while others observe colors but will not relate them to other visual elements, such as shape.

I would theorize that children can be taught to observe just as they are taught to read. Art exercises in observation can be designed so that the child becomes conscious of various types of visual stimuli. The student can develop a capacity for receiving and judging a variety of visual phenomena. A visual bombardment could take place wherein the student is constantly exposed to intense visual statements in the course of his instruction. The objectives of this component are the affective behaviors associated with receiving or attending to visual stimuli. These behaviors were identified and outlined by Krathwohl, Bloom, and Masia.[15] The behaviors may be further broken down into awareness, willingness to receive, and controlled or selected attention to visual phenomena.

Instruction in this component would involve sensitizing the child

to various visual phenomena and letting him react to the content both linguistically and visually. Observation skills could be developed so that the student became a critical and descriptive observer, able to accept a variety of visual stimuli.

Activities would be grouped around:

1. Visual awareness of our environment which could proceed either from the cosmos Buckminster Fuller describes as our environment or from the student's most immediate environment—his body in space and the place which he frequents most: his home, backyard, or street.
2. A visual bombardment of the classroom with television, films, slides, still pictures, drawings, and symbols.
3. Methods of responding to both man-made and natural objects. For instance, the child could respond by talking about visual phenomena or by recording with various art media.

Description of Visual Relationships: How a child begins to establish relationships in existing visual phenomena may well determine his ability to select and generalize visually in and out of the context of his environment. It would seem logical that if the child was able to recognize and describe either visually or linguistically relationships between such art elements as line, shape, color, and texture, it would enhance the chances of his being able to later generalize form. This hypothesis is supported by Arnheim.[16] He states that visual perception constantly involves the apprehension of relationships between the whole of the visual field and some item within it. He goes on to say that the establishment of relationships is one of the principal cognitive mechanisms. In perception it operates in so-called rules of grouping by similarity as described by Gestalt psychologists. However, Arnheim makes a distinction between grouping by simple connection of items that are identical or resemble each other by some mechanical criterion and those which are relative in terms of the perceptual dimensions. This may indicate that recognition or classification of visual phenomena, such as a shape out of context, would not be as useful as those experiences which introduce the students to elements within a visual context, such as in a painting or in a room. Art does not exist in itself but because of the elements within it, that is, in concert with shape, or texture, or color; therefore, a synthesis should be provided in instruction which introduces these elements into the "field" in a Gestalt sense so that the student sets up environmental referents to these elements and not to those which are abstract and irrelevant.

The implications of Arnheim's statements for instruction in early childhood education are such that art activities could be created which have different structural orientations. One could be the description and recognition of visual relationships without an overall context. Using the element of shape, the student could be given a varied group of geometric and non-geometric blocks to sort along these two parame-

ters in a series of problems. A second set of activities could be organized which would have other structural elements, such as line or color, relating to geometric or non-geometric shapes in environmental settings, as in a room or in a given set of paintings.

Resnick[17] describes eleven levels of classification skills which could be used for the sequential development of recognizing visual relationships. The first level is one-dimensional sorting. Given an array of objects which differ in only one attribute (e.g., color *or* function *or* texture, etc.) the child is asked to sort them into separate categories on the basis of that attribute. From this first level the skills are sequenced in eleven steps according to complexity. Level ten requests that the child describe the classification system he used when given an array of objects which could be sorted into several classes. And finally in the eleventh level he must describe a system.

After working through the ten levels the child should be able to select his own criteria to describe or classify visual phenomena. Resnick's visual discrimination sequence should also be applicable to developing skills in discrimination of shape, color, size, positions, and orientation.

Selectivity: The process of selection is the method by which a photographer selects parts from the whole by using a camera's view finder. This becomes a problem concerned with the cognitive function of recognition and the ordering and simplification of visual phenomena. Arnheim states that selectivity is a part of direct perception. He indicates that all cognitive activity presupposes selection and that the mind must focus on the subject to be considered and thereby lift it out of the continuum of the total given world. To establish the proper range of a problem—how much to include, how much to exclude—is a crucial aspect of problem solving. Perception is selective by its very nature.

Selection of visual phenomena from any given natural or man-made environment becomes the source of information for making aesthetic judgments. A child, given a visual stimulus, must sort out the irrelevant visual components and extract a content which has meaning for him. In the art of drawing, the child is continually selecting from visual stimuli and making judgments about what to include and not include in his picture. Selecting in the early years may be only a matter of making choices about the visual components, but it later implies organization of visual elements in composition.

If a child is given a simple camera, which does not preclude his use by its complexity as a mechanical thing, and is asked to take some pictures, he is more than likely to take as many pictures as the role of film will allow, with no concern for the visual content of the picture. He will probably be fascinated by the camera and its mechanism and not use it as a tool for picture making. However, if the student were asked to take the camera and take pictures of only those things which he considered rough or smooth in surface quality, then he would have to select those things which fit the criteria which he has chosen from

a variety of visual stimuli. This elementary exercise in developing and using criteria for selection is a necessary step toward conceptual thinking.

Generalization of Form and Abstraction: These two components form the last two parts of the continuum. "Generalization of form" implies a synthesis of visual principles. It implies that the student will have the ability to analyze visual phenomena and be able to make a visual statement. "Generalization of form" also implies his ability to take unrelated visual phenomena and interrelate the parts into a generalizable whole as in a painting or piece of sculpture.

Abstraction, as Arnheim[19] indicates, is "the connecting link between perception and thinking." In Arnheim's terms, to abstract does not mean to withdraw from direct experience but rather to find a generic pattern within given or particular instances. In the arts he indicates that abstract painting or sculpture makes statements about reality by patterns that do not resemble it.

It is necessary then to look at abstracting as one of the most sophisticated behaviors to be exhibited. In the continuum it becomes a method for utilizing the other four components and also for determining a visual direction which is unique in its origin. These two components would not be a part of the Early Education Program as they demand higher competencies than children at this level should be expected to exhibit. However, these two components should be an integral part of the structure of art activities which project into the primary and intermediate grades.

To summarize, the continuum provides a structure for organizing activities into a sequence for an Early Education Program in the visual arts. The development of skills which are relative to perceptual learning would be provided by using Resnick's taxonomy of behaviors in the components. Visual concept formation based on Arnheim's theories is not only the production of a product but also the method by which the student visually investigates and synthesizes his surroundings, and these become the other dimensions of the model. The length of time and emphasis on each component would vary from group to group. However, it is very important that the continuum be considered as cyclical in that reinforcements of each of the components happen at other levels of instruction. The method of ordering activities would be from the simple to the complex with overlapping and combining of components when applicable. At the early ages instruction would be designed with greater emphasis on the first three components that involve observation, description of visual relationships, and selectivity. As the child matures intellectually, more emphasis would be put upon generalization of form and the process of abstraction. Bruner's organizing principle for the curriculum could then be applied in the cycle and could be repeated with varying levels of sophistication as the child moves through the school program. The reader should accept this model as a first attempt at providing a structure for sequencing learn-

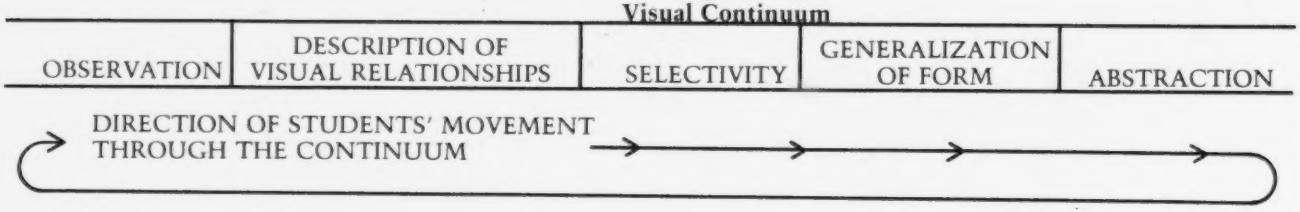
ing activities in the visual arts for early childhood education. It is by no means perfected or in a final form and should only be taken as a theoretical model which must be put into operation, tested, and then accepted, modified, or thrown out as unworkable. Pools or repertories of behaviors should be generated for each component of the continuum and then be applied and evaluated under classroom situations.

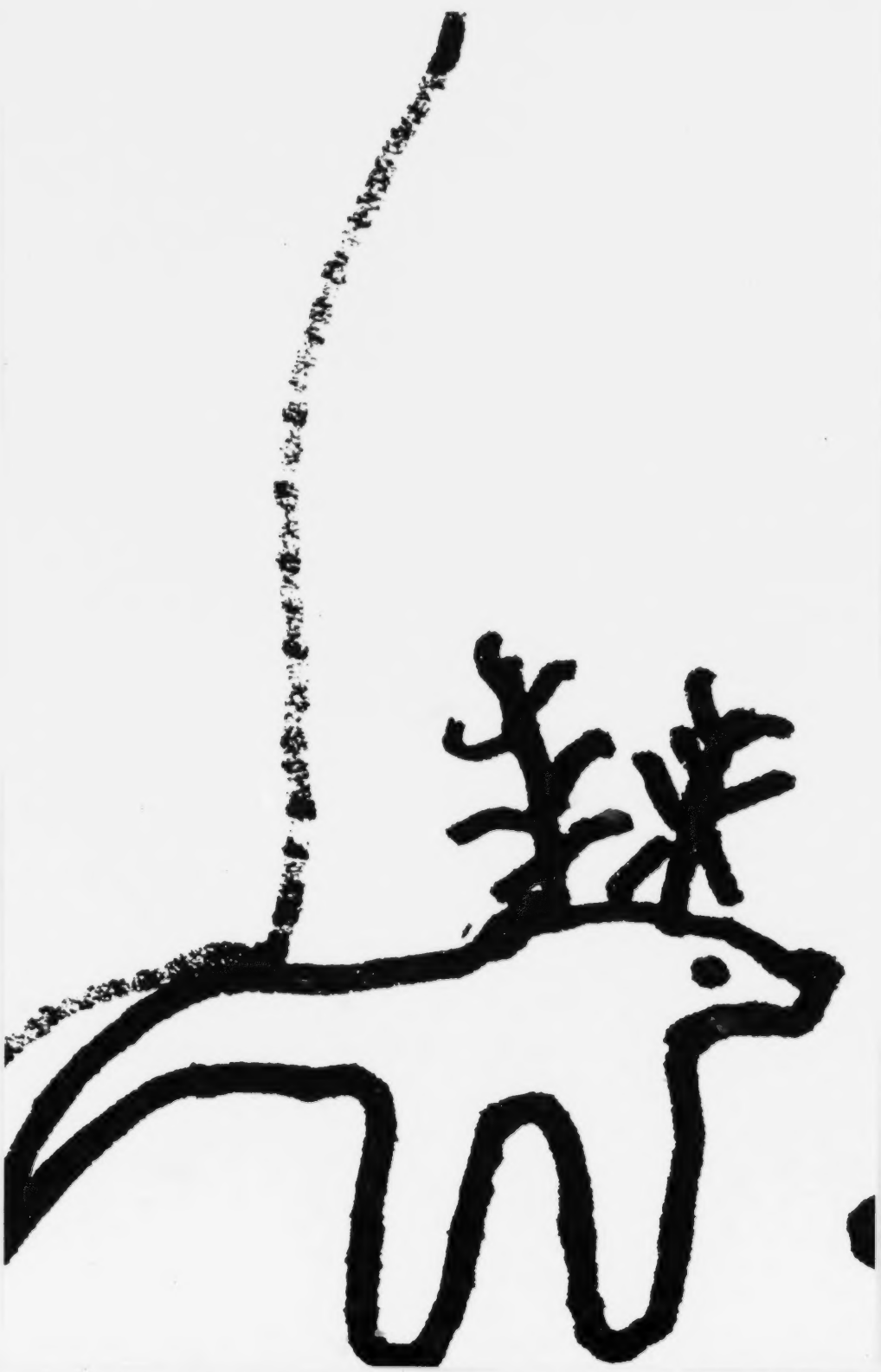
To write about what is exemplary in any field is difficult because it implies that some value judgments have been made as to the worth of the program. The programs reviewed or projected were not selected on the basis only of success or excellence but also on the basis that each "revise" provided a model for organizing a program in early childhood education which the field could use as a starting point and either improve existing programs or develop new ones. Hopefully the value in this approach is that it is suggestive rather than perscriptive and that it leaves the final judgments to art educators in the field.

Figure 1
PROFILE - - - - - - EARLY EDUCATION TEST BATTERY

	RECEPTION				COGNITION		RETENTION				EXPRESSION			MATU-RITY	STAN. DEV. UNITS
Age Score															
Above Normal															+2.00
Expected Normal Range															+1.00 0.00 −1.00
Below Normal															−2.00
Skill	Auditory Discr.	Auditory Comp.	Visual Comp.	Visual DFS	Auditory-Visual Assoc.	Auditory-Visual Voc.	Auditory-Visual Assoc.	Aud. Recall	Visual Recall	Verbal Syntax	Verbal Fluency	Motor Gestures	Motor Control	Behav. Rating Scale	
Test	3-D	ITPA 1	ITPA 2	Beery VMI	ITPA 3	PPVT	ITPA 4	ITPA 8	ITPA 9	ITPA 7	ITPA 5	ITPA 6	Gross Motor		

Figure 2
Visual Continuum





REFERENCES

[1] Resnick, Lauren B., *Design of an Early Learning Curriculum*, Working Paper 16, University of Pittsburgh, December 1967. p. 1.

[2] Andrews, Michael, "An Art Education Curriculum for Pre-primary Children," Monograph, Syracuse University, 1968. p. 1.

[3] Lowenfeld, Viktor, *Creative and Mental Growth* (Rev. ed.), New York, The Macmillan Company, 1963.

[4] Andrews, Michael, *op cit.* p. 4.

[5] Andrews, Michael, *op cit.* p. 7.

[6] *Personalizing Early Education*, A Purposeful Plan With Guidelines for Teachers (Report), Office of Prekindergarten-Kindergarten Research Center, School District of University City, Missouri, December 1967.

[7] Osgood, Charles, "A Behavioristic Analysis," *Contemporary Approaches to Cognition*, Cambridge, Massachusetts: Harvard University Press, 1957.

[8] Bateman, Barbara, "Learning Disabilities . . . Yesterday, Today, and Tomorrow," *Exceptional Children*, Council Exceptional Children, Washington, D. C., 1964.

[9] Developmental Skills Series, Booklet I, *Motor Activities*; Booklet II, *Sensory Experiences: Tactile, Auditory, Visual*; Booklet III, *Activities for Building Concepts for Logical Thinking*; Booklet IV, *Language Experiences*; Booklet V, *Fun While Learning at Home*, Office of Prekindergarten-Kindergarten Research Center, School District of University City, Missouri, July 1967. Revised June 1968.

[10] Richard, Nancy and Madeja, Stanley S., *The Development of a Learning Environment for Aesthetic Education: An Interim Report on an Experimental Kindergarten*, CEMREL, Inc., 1970.

[11] Harris, Dale B., *Children's Drawings as Measures of Intellectual Maturity*, Harcourt, Brace and World, Inc., 1963.

[12] Lark-Horovitz, Betty; Lewis, Hilda; Luca, Mark, *Understanding Children's Art for Better Teaching*, Ohio: Charles E. Merrill Books, Inc., 1967.

[13] Eisner, Elliot W., *A Comparison of the Developmental Drawing Characteristics of Culturally Advantaged and Culturally Disadvantaged Children* (Final Report), U. S. Office of Education, Bureau of Research, OE-6-10-027.

[14] Bruner, Jerome S., *The Process of Education*, New York: Random House, 1960. p. 13.

[15] Krathwohl, David R.; Bloom, Benjamin S.; Masia, Bertram B., *Taxonomy of Educational Objectives*, The Classification of Educational Goals, Handbook II: Affective Domain; New York: David McKay Company, Inc., 1956. pp. 176-77.

[16] Arnheim, Rudolf, "Study of Visual Concept Formation," Final Report; OEC-1-6-061741-1196, Office of Education, Bureau of Research. pp. 5-6.

[17] Resnick, Lauren B., *op cit.* p. 28.

[18] Resnick, Lauren B., *op cit.* p. 26.

[19] Arnheim, Rudolf, *op cit.* p. 8.

Stanley S. Madeja is director of the Aesthetic Education Program, Central Midwestern Regional Educational Laboratory in St. Ann, Missouri. Before coming to CEMREL he was the art education specialist for the U. S. Office of Education. He has also served as director of the Artist-in-Residence Program at CEMREL and director of the JDR 3rd Fund Project in University City, Missouri. Dr. Madeja received his Ph.D., M.A., and B.S. degrees from the University of Minnesota. He is the recipient of the "Blue Ribbon Award" for single concept films. He is also a jewelry designer. Dr. Madeja is a frequent contributor to professional journals. His articles have appeared in journals such as *Art Education, School Arts*, and *Studies in Art Education*, and he has been a guest editor of the *Journal of Aesthetic Education*. He was editor of the NAEA publication *Exemplary Programs in Art Education*, and a co-author of *Artist in the Schools*.

FILMED FROM BEST AVAILABLE COPY

NATIONAL ART EDUCATION ASSOCIATION
1201 16th St., N.W., Washington, D.C. 20036